

## **Ohio Department of Commerce**

Division of State Fire Marshal

Bureau of Underground Storage Tank Regulations

8895 E Main St. • P.O. Box 687

Reynoldsburg, OH 43068-9009

(614) 752-7938 FAX (614) 752-7942

www.com.state.oh.us

Bob Taft Governor

Doug White Director

US EPA RECORDS CENTER REGION 5



November 02, 2006

BUD SMITH
WHEELING PITTSBURGH STEEL CORP.
1134 MARKET ST
WHEELING, WV 26003

SITE: WHEELING PITTSBURGH STEEL CORP. 1001 MAIN ST

MARTINS EERRY OH BELMONT COUNTY RELEASE #07000179-N00001

RE: APPROVAL OF TIER 1 INVESTIGATION REPORT

Dear Mr. Smith:

The Bureau of Underground Storage Tank Regulations (BUSTR) has reviewed the corrective action file for the above referenced site. BUSTR has determined that the Tier 1 Investigation report requirements of Ohio Administrative Code (OAC) 1301:7-9-13(I) have been completed. BUSTR therefore grants approval to conduct one or a combination of either a Tier 2 Evaluation pursuant of OAC 1301:7-9-13(L), an Interim Response Action pursuant to OAC 1301-7-9-13(K), or submit a Remedial Action Plan pursuant to OAC 1301:7-9-13(N).

It is understood that a Tier 2 Evaluation is planned to be conducted. The Tier 2 Evaluation must be submitted on or before May 2, 2008. Please provide future site maps and figures on paper no larger than 11 x 17.

Any excavated soil shall be managed as petroleum contaminated soil (PCS) unless laboratory analysis indicates otherwise. Underground storage tank owners and/or operators are requested to complete and submit a "Petroleum Contaminated Soil Form". The completion of this form, along with all applicable supporting documentation, will allow the BUSTR staff to verify proper PCS disposal and/or treatment. A separate form must be completed for each soil pile or containerized soil group.

Publications that may help you to understand the requirements for compliance with BUSTR's rules and regulations may be found on the Internet at <a href="https://www.com.state.oh.us/sfm">www.com.state.oh.us/sfm</a> or by calling our office.

Thank you for your cooperation. If you have any questions, please contact me at (614) 752-7928.

Sincerely,

Scott Sigler, CHMM Environmental Specialist

xc: Site File

Carol Anne McConnell, PUSTRCB

David Olson - CEC



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Bureau of Underground Storage Tank Regulations 8895 E Main St. • P.O. Box 687 Reynoldsburg, OH 43068-9009 (614) 752-7938 FAX (614) 752-7942 www.com.state.oh.us **Bob Taft** Governor

Doug White Director

August 28, 2006

BUD SMITH WHEELING PITTSBURGH STEEL CORP. 1134 MARKET ST WHEELING, WV 26003 SITE: WHEELING PITTSBURGH STEEL CORP.
1001 MAIN ST
MARTINS FERRY OH
BELMONT COUNTY
RELEASE #07000179-N00001

RE: ADDITIONAL INFORMATION REQUESTED

Dear Mr. Smith:

The Bureau of Underground Storage Tank Regulations (BUSTR) has reviewed your report titled "Tier 1 Investigation Report" dated August 18, 2006. Based on our review, BUSTR requests the following:

- 1. The figures in the report were depicted with a scale of approximately 1 inch equals 125 feet. Based on the scale of the map it is unclear how close the soil borings/monitoring wells are from the source area. Please provide maps with a scale of approximately 1 inch equals 20 feet or 1 inch equals 40 feet.
- 2. Since a gasoline UST is the source of this release, analytical group I chemicals of concern are applicable. Total Petroleum Hydrocarbons  $C_6$ - $C_{12}$  in soil have not been sampled in accordance with Ohio Administrative Code (OAC) 1301:7-9-13. Additional soil samples are required to be collected from the source area and analyzed for TPH  $C_6$ - $C_{12}$ .
- 3. Based on the review of the maps, it appears that only two soil borings have been advanced in the source area and sampled in accordance with OAC 1301:7-9-13, effective March 2005. OAC 1301:7-9-13 requires that a minimum of three soil borings be advanced in the area of highest concentration of chemical(s) of concern. Additional soil borings are required in the source area.
- 4. The ground water maximum concentration listed in the text should include the most recent data from the monitoring wells.

Please submit this information to BUSTR on or before December 28, 2006. Upon receipt of the requested information, the review of the Tier 1 Investigation Report will be completed.

Thank you for your cooperation. If you have any questions, please contact me at (614) 752-7928.

Sincerely,

Scott Sigler, CHMM Environmental Specialist

xc:

Site File

David Olson - Civil & Environmental Consultants, Inc.



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Bureau of Underground Storage Tank Regulations 8895 E Main St. • P.O. Box 687 Reynoldsburg, OH 43068-9009 (614) 752-7938 FAX (614) 752-7942 www.com.state.oh.us Bob Taft Governor 1.4.5.6.1

Doug White Director

August 26, 2005

BUD SMITH WHEELING PITTSBURGH STEEL CORP. 1134 MARKET ST WHEELING, WV 26003 SITE: WHEELING PITTSBURGH STEEL CORP.
1001 MAIN ST
MARTINS FERRY OH
BELMONT COUNTY
RELEASE #07000179-N00001

RE: TIER 1 SOURCE INVESTIGATION REQUIRED

Dear Mr. Smith:

The Bureau of Underground Storage Tank Regulations (BUSTR) has received your letter indicating your intention to conduct corrective actions in accordance with 2005 corrective action rules. You are required to perform a Tier 1 Source Investigation as prescribed in Ohio Administrative Code 1301:7-9-13(H), effective March 2005, and explained in BUSTR's *Technical Guidance Manual (2005)*. These documents describe the activities that must be performed during the tier evaluation and the information that is to be submitted to BUSTR. You must submit either the Tier 1 Evaluation or the Tier 1 Delineation Notification report on or before November 22, 2005.

Publications that may help you to understand the requirements for compliance with BUSTR's rules and regulations may be found on the Internet at <a href="https://www.com.state.oh.us/sfm">www.com.state.oh.us/sfm</a> or by calling our office.

Thank you for your cooperation. If you have any questions, please contact me at (614) 752-7928.

Sincerely,

Scott Sigler, CHMM Environmental Specialist

xc:

Site File

PATRICK J. SMITH Environmental Engineer



(740) 283-5542

December 18, 2003

Mr. Scott Sigler, CHMM
Ohio Department of Commerce
Division of State Fire Marshall
Bureau of Underground Storage Tank Regulations
8895 E. Main Street
Reynoldsburg, OH 43068-9009

Re: Remediation of Underground Storage Tank Release - Martins Ferry Plant Response to BUSTR Letter dated October 15, 2003

Dear Mr. Sigler:

This letter is in response to your letter to me dated October 15, 2003 regarding the remediation of the underground storage tank release site at WPSC's Martins Ferry Plant. As you requested, enclosed please find the following:

- A site map depicting the UST site, monitoring well and soil boring/sampling locations;
- Three tables summarizing the analytical results for all of the soil samples collected at the site, including samples collected in 1990 (Phase I investigation), 1991 (Phase II investigation), and 2002 (to evaluate current concentrations and to satisfy the 1999 Rule requirements); and
- A table summarizing the analytical results for all groundwater samples collected at the site to date.

Our consultant, Civil & Environmental Consultants Inc. (CEC) has performed a preliminary Tier 2 evaluation of the site, as well as fate and transport modeling using the Bioscreen model to evaluate site conditions under the 1999 corrective action rule. Before we make our formal decision regarding use of the 1999 rule, we would like to meet with you to discuss our conceptual approach to corrective action at the site under the new rule.

Please call me at 740-283-5542 at your earliest convenience to schedule a meeting.

Sincerely,

Patrick J. Smith

Environmental Engineer

Enclosures

cc: BE\$/ECMF/2.4.5.1.4



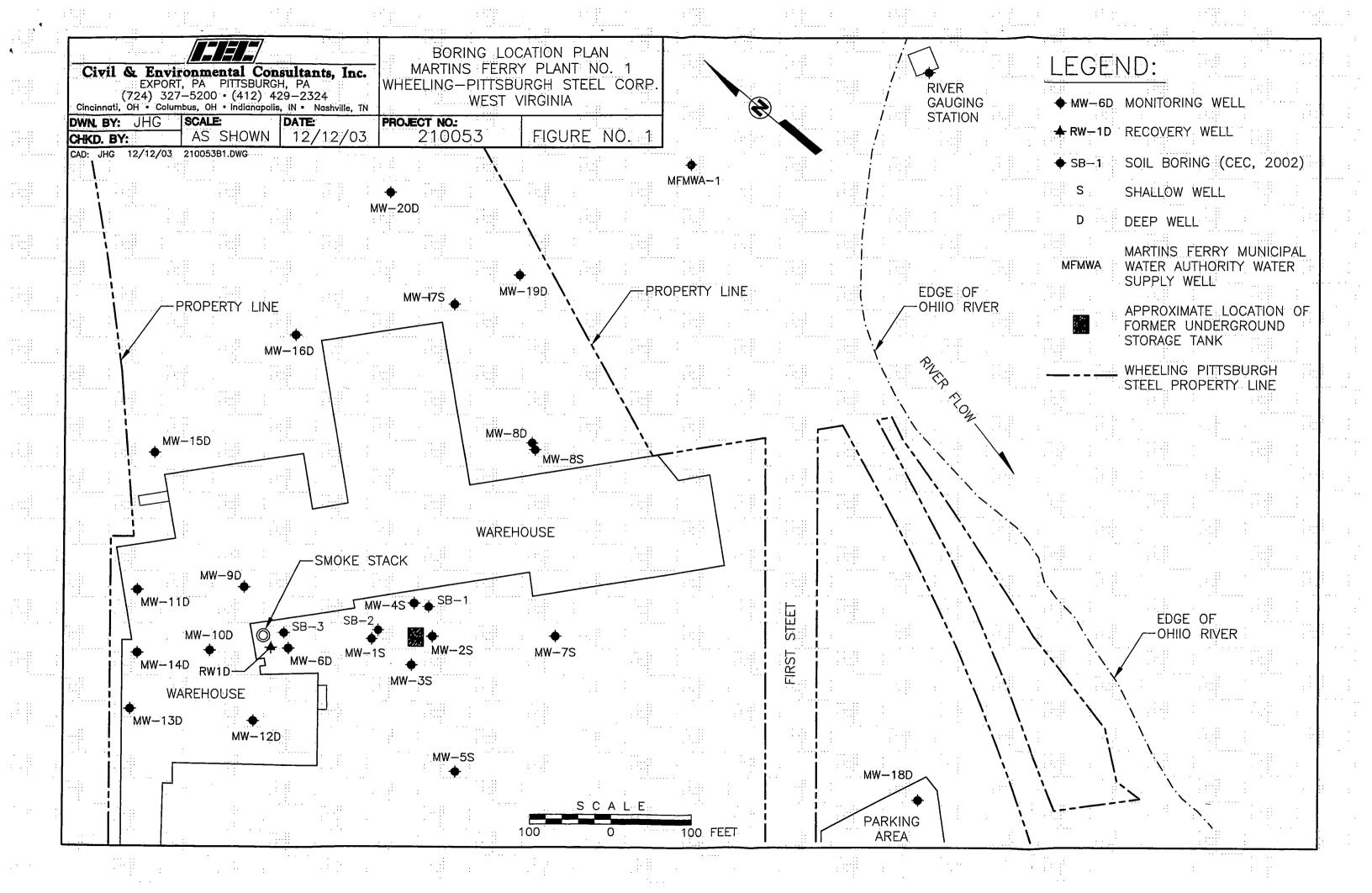


Table 4
SOIL DATA SUMMARY
NOVEMBER 1990

## WHEELING-PITTSBURGH STEEL MARTINS FERRY, OHIO

Parameter	MW-1	MW-2	MM-3	MW-4
Benzene	0.008	1.000	0.014	3.74
Toluene	0.018	4.140	0.019	31.70
Ethylbenzene	0.009	0.341	0.007	15.80
Xylenes	0.027	2.670	0.029	20.30
ТРН	2.500	14.600	40.300	68.80
BTEX	0.062	8.151	0.069	71.54

Note: All units in parts per million.

Table 3

SOIL ANALYSIS
MAY-JUNE 1991

MW-12 MW-12 MW-12	MW-11 MW-11 MW-11	01-MW 01-MW 01-MW	6-MW 6-MW 6-MW	8 - MM 8 - MM 8 - MM	MW-7 MW-7 MW-7	0-MM 9-MM 9-MM	MW-5	Sample ID
30-31.5 35-26.5 40-41.5	30-31.5 35-36.5 40-41.5	30-31.5 35-36.5 40-41.5	30-31.5 35-36.5 40-41.5	15.5-16.5 20-21.5 25-26.5	10-11.5 15-16.5 20-21.5	20-21.5 30-31.5 35-36.5	10-11.5 15-16.5 20-21.5	Depth (Feet)
^ ^ ^ N N N	^ ^ ^ N N N	^ ^ ^ % % %	204 204	\$ <b>\$</b> \$	^ ^ L	1,530	222	Benzene (ug/kg)
888	^ 6 2	14 31	<2 36 2,570	۵۵۵	76 <b>^2</b>	4,930 13,600	888	Toluene (ug/kg)
888		1 1 1 1 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	<2 35 2,690	۵۵۵	A A 39	3,600 7,390	888	Ethylbenzene (ug/kg)
888	30 32 21	100 121 109	3 232 5,140	۵۵۵	234 18 11	<27 11,000 14,300	\$ \$ \$ \$ \$ \$ \$ \$	Xylenes (ug/kg)
18.9 31.8 21.9	28.0 21.3 20.2	15.6 6	21.5 14.3 17.9	47.1 21.7 26.2	21.9 19.7 20.9	22 23 23 20 20 20 20 20 20 20 20 20 20 20 20 20	89. 60.9 4.9	Total Lead (mg/kg)
^5.0 0	9.0 7.5 5.0	A A . S . O O	5. 22. 6	۸5. 000	A5.0	<5.0 <5.0 17.0 185.0	A 95.0	TPH* (mg/kg)

Table 3 (Continued)

## SOIL ANALYSIS MAY-JUNE 1991

## WHEELING-PITTSBURGH STEEL MARTINS FERRY, OHIO

Sample ID	Depth (Feet)	Benzene (ug/kg)	Toluene (ug/kg)	Ethylbenzene (ug/kg)	Xylenes (ug/kg)	Total Lead (mg/kg)	TPH* (mg/kg)
MW-13	30-31.5	<2	<2	<2	11	18.7	<5.0
MW-13	35-36.5	<2	<2	<2	3	24.5	<5.0
MW-13	40-41.5	<2	<2	<2	<2	20.4	<5.0
MW-14	30-31.5	<2	<b>&lt;2</b> .	<2	<2	24.3	40.5
MW-14	35-36.5	<2	<2	<2	<2	45.2	10.5
MW-14	40-41.5	<2	<2	<2	4	22.4	17.3

BTEX concentration in ug/kg. Total lead and total petroleum hydrocarbon (TPH) in mg/kg.

TABLE 1

## SOIL ANALYTICAL DATA SUMMARY JUNE 2002 WHEELING-PITTSBURGH STEEL PLANT MARTINS FERRY, OHIO UST CLOSURE

Sample ID	· · · · · · · · · · · · · · · · · · ·	Cor	nstituents (mg/k	<b>(g</b> )	
	Benzene	Ethylbenzene	MTBE	Toluene	Xylenes (Total)
SB-1 (20-22')	< 0.250	< 0.250	< 0.250	<0.250	< 0.250
SB-1 (26-28')	< 0.0051	< 0.0051	< 0.0051	< 0.0051	< 0.0051
SB-2 (18-20')	< 0.0050	< 0.005	< 0.005	< 0.0050	< 0.005
SB-2 (24-26')	< 0.024	7.10	< 0.024	1.40	47
SB-3 (26-28')	< 0.005	0.0055	< 0.005	< 0.005	0.015
SB-3 (34-36')	< 0.005	0.057	< 0.005	< 0.005	0.140

These samples were collected by Civil & Environmental Consultants, Inc. in July 2002.

							•	•	,											•••					SI-MM	MONITORING WELL ID	
	09/17/03	06/17/03	03/20/03	12/19/02	09/23/02	06/06/02	03/14/02	12/14/01	09/11/01	06/14/01	03/27/01	09/18/00	06/30/00	03/29/00	12/10/99	08/19/99	05/27/99	02/25/99	86/81/11	08/26/98	05/13/98	02/23/98	12/29/97	12/20/94	06/91/11	SAMPLE DATE	
	40	25	< 100	< 250	110	39	210	120	< 250	96	140	130	110	130	420	160	210	100	320	140	220	160	500	6,300	178,000	BENZENE	
	42	110	280	600	1,700	710	1,000	120	350	760	180	230	730	1,400	580	610	1,200	2,700	2,800	4,400	6,100	3,500	4,600	37,000	128,000	TOLUENE	CONC
	2,700	1,700	2,400	1,800	3,000	2,400	2,700	2,600	2,300	1,700	2,000	2,500	2,700	1,900	3,400	2,300	3,000	1,500	2,200	1,700	2,600	1,600	3,000	6,300	6,440	ETHYLBENZENE	CONCENTRATIONS in ug/L
	1,200	2,800	5,700	15,000	13,800	8,100	11,000	5,500	6,300	5,700	4,600	5,400	8,500	9,600	5,100	8,300	12,000	12,000	12,000	12,000	17,000	9,100	18,000	43,000	42,300	TOTAL XYLENES	in ug/L
	3,982	4,635	8,380	17,400	18,610	11,249	14,910	8,340	8,950	8,216	6,920	8,260	12,040	13,030	9,500	11,370	16,410	16,300	17,320	18,240	25,920	14,360	26,100	92,600	354,740	TOTAL BTEX	
	< 5.0	< 5.0	< 100	< 250	< 100	10	\ S3\	15	< 250	<50	< 50	<50	<b>63</b> >	^ 55	< 50	< 5.0	< 100	NA	METHYL TERT BUTYL ETHER	յինո							
	NA	NA.	NA	NA	NA	36	30	31	50	31	46	230	22.8	TOTAL PETROLEUM HYDROCARBONS - GRO	圓												

	·		CONC	ENTRATION	S in ug/L		ug/L	mg/L
MONITORING WELL ID	SAMPLE DATE	BENZENE	TOLUENE	ETHYLBENZENE	TOTAL XYLENES	TOTAL BTEX	METHYL TERT BUTYL ETHER	TOTAL PETROLEUM HYDROCARBONS . GRO
MW-2S	11/16/90	2,120	16,400	2,000	13,400	33,920	NA	17.5
	05/28/91	644	1,510	589	3,060	5,803	NA	7.8
	12/29/97	11	20	68	220	319	NA	1.6
Į i	02/23/98	98	340	400	1,400	2,238	NA	6.6
1	05/13/98	37	210	240	1,200	1,687	NA	5.5
i i	08/26/98	25	70	300	1,100	1,495	NA	5.5
	11/18/98	29	18	270	620	937	NA	4.9
}	02/25/99	37	73	300	440	850	NA	8.4
Į į	05/27/99	28	65	140	360	593	54	NA
1	08/19/99	13	8	210	200	431	22	NA ·
	12/10/99	74	600	550	2,900	4,124	< 50	NA
	03/29/00	31	43	170	170	414	23	NA
	06/30/00	< 50	220	190	830	1,240	< 50	NA
1 .	09/18/00	. 11	<b>&lt;</b> 5	24	160	195	15	NA
	03/27/01				NOT SAMPLE	ED		
]	06/14/01				NOT SAMPLI	ED		
	09/11/01				NOT SAMPLI	ED		
	12/14/01				NOT SAMPLE	ED		
	03/14/02				NOT SAMPLE	D		
	06/06/02				NOT SAMPLE	D		
	09/23/02				NOT SAMPLE	D		
, (	12/19/02				NOT SAMPLE	B		
1	03/20/03				NOT SAMPLE	ED		
	06/17/03				NOT SAMPLE	D		
	09/17/03				NOT SAMPLE	D		

																									SE-MW	MONITORING Well Id	
	09/17/03	06/17/03	03/20/03	12/19/02	09/23/02	06/06/02	03/14/02	12/14/01	09/11/01	06/14/01	03/27/01	09/18/00	06/30/00	03/29/00	12/10/99	08/19/99	05/27/99	02/25/99	11/18/98	08/26/98	05/13/98	02/23/98	12/29/97	05/28/91	11/16/90	SAMPLE . DATE	
												< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	<1	<1	<1	< 1	<1	<1	312	4,430	BENZENE	
						   						< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 1	<1	< 1	<1	<1	< 1	29	1,000	TOLUENE	CONC
												< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 1	<1	<1	<1	<1	<1	16	230	ETHYLBENZENE	CONCENTRATIONS in ug/L
	NOT SAMPLED	< 5.0	< 5.0	51	< 5.0	< 5.0	< 5.0	< 3	< 3	< 3	< 3	< 3	< 3	53	980	TOTAL XYLENES	S in ug/L										
	ED .	8	Ð	8	Đ	٥	8		8	8	8	<5.0	<5.0	5	< 5.0	< 5.0	< 5.0	< 6	< 6	< 6	< 6	< 6	< 6	410	6,640	TOTAL BTEX	
												< 5.0	< 5.0	< 5.0	11	< 5.0	< 5.0	NA	METHYL TERT BUTYL ETHER	uglt							
												NA	NA	NA	NA	NA	NA	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	0.8	TOTAL PETROLEUM HYDROCARBONS - GRO	mglt

			CONC	ENTRATIONS	S in ug/L		ug/L	mg/L
MONITORING WELL ID	SAMPLE Date	BENZENE	TOLUENE	ETHYLBENZENE	TOTAL XYLENES	TOTAL BTEX	METHYL TERT BUTYL ETHER	TOTAL PETROLEUM HYDROCARBONS . GRO
MW-4S	11/16/90	2,440	19,800	2,290	15,900	40,430	NA	6
	05/28/91	997	2,560	2,250	13,500	19,307	NA	21.6
1	12/29/97	9	3	77	120	209	NA	3.4
ļ ·	02/23/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
1	05/13/98	9	2	14	69	94	NA	2
1	08/26/98	2	13	12	50	77	NA	1.3
	11/18/98	26	5	57	32	120	NA	2.1
	02/25/99	< 1	16	5	19	40	NA	1.1
	05/27/99	< 5.0	< 5.0	12	16	28	12	NA
	08/19/99	< 5.0	< 5.0	10	< 5.0	10	< 5.0	NA
	12/10/99	< 5.0	< 5.0	13_	14	27	11	NA
	03/29/00	< 5.0	< 5.0	7	6	14	5.5	NA .
]	06/30/00	5	< 5.0	8	< 5.0	13	5.2	NA
	09/18/00	8	<5	11	<5	19	9.4	NA
	03/27/01				NOT SAMPLI	ED		
]	06/14/01				NOT SAMPL	ED		
]	09/11/01				NOT SAMPLI	ED		
]	12/14/01				NOT SAMPLI	ED		
	03/14/02				NOT SAMPLI	ED		
	06 06 02				NOT SAMPLI	ED		
	09/23/02				NOT SAMPLI	ED		
	12/19/02				NOT SAMPL	ED		
	03/20/03				NOT SAMPL	ED		
	06/17/03				NOT SAMPLI	ED		
	09/17/03				NOT SAMPLI	ED		

																						SS-WM	MONITORING WELL ID	
	09/17/03	06/17/03	03/20/03	12/19/02	09/23/02	06/06/02	03/14/02	12/14/01	09/11/01	06/14/01	03/27/01	09/18/00	06/30/00	03/29/00	12/10/99	08/19/99	05/27/99	02/25/99	11/18/98	08/26/98	05/13/98	05/28/91	SAMPLE DATE	
												< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	<1	<1	^1	<b>&lt;</b> 1	88	BENZENE	
												< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 1	<1	<1	<1	19	TOLUENE	CONC
												< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	<1	<1	<1	<1	9	ETHYLBENZENE	CONCENTRATIONS in ug/L
	NOT SAMPLED	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 3	< 3	< 3	< 3	35	TOTAL XYLENES	in ug/L										
	0	O	60	0	0	8	e	8	0	Ð	D	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 6	< 6	< 6	< 6	148	TOTAL BTEX	
												< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA	NA	NA	NA	NA	METHYL TERT BUTYL ETHER	ugiL
												NA	NA	NA	NA	NA	NA	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	TOTAL PETROLEUM HYDROCARBONS - GRO	mg/L

			CONC	ENTRATIONS	S in vo/L		ug/L	mg/L
MONITORING WELL ID	SAMPLE DATE	BENZENE	TOLUENE	ETHYLBENZENE	TOTAL XYLENES	TOTAL BTEX	METHYL TERT BUTYL ETHER	TOTAL PETROLEUM HYDROCARBONS . GRO
MW-7S	05/28/91	113	80	27	149	369	NA	< 0.5
İ	12/20/94	< 0.5	< 1.0	< 1.0	< 2.0	< 4.5	NA	< 0.1
•	12/29/97	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
1	02/23/98							
	05/13/98	< 1	1	<1	< 3	< 6	NA	< 0.05
	08/26/98	< 1	1	< 1	< 3	< 6	NA	< 0.05
l i	11/18/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
1	02/25/99	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
1	05/27/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
1	08/19/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
1	12/10/99	< 5.0	< 5.0	< 5.0	20	20	< 5.0	NA
1	03/29/00	< 5.0	< 5.0	6	< 5.0	6	< 5.0	NA
	06/30/00				NOT SAMPL	ED		
	09/18/00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	03/27/01				NOT SAMPL	ED		
1	06/14/01				NOT SAMPL	ED		
	09/11/01				NOT SAMPL	ED		
	12/14/01				NOT SAMPL	ED		
	03/14/02				NOT SAMPLE	ED		
	06/06/02				NOT SAMPL	ED		
1	09/23/02				NOT SAMPL	ED		
	12/19/02				NOT SAMPL	ED		
1 1	03/20/03				NOT SAMPLE	ED		
	06/17/03				NOT SAMPLI	ED		
	09/17/03				NOT SAMPLI	ED		
[ ]								

MW-BS 11/1 09/2 05/1 08/2 11/1 02/2 05/2 05/2 08/1 12/1 03/2 06/3 09/1	116/90 124/93 123/98 113/98 126/98 118/98 125/99 127/99	5.0 < 0.2 < 1 < 1 < 1	12 < 0.5	ETHYLBENZENE 8.0 > 0.8	20 < 1.7	107AL BTEX	S S METHYL TERT BUTYL ETHER	> > TOTAL PETROLEUM HYDROCARBONS - GRO
09/2 02/2 05/1 08/2 11/1 02/2 05/2 05/2 08/1 12/1 03/2 06/3	24 93  23 98  13 98  26 98  18 98  25 99	< 0.2 < 1 < 1 < 1	< 0.5	< 0.8	< 1.7	< 3.2		
02/2 05/1 08/2 11/1 02/2 05/2 05/2 08/1 12/1 03/2 06/3	23 98  13 98  26 98  18 98  25 99	<1 <1 <1	< 1	· · · · · · ·			NA	< 0.1
05/1 08/2 11/1 02/2 05/2 08/1 12/1 03/2 06/3	13 98  26 98  18 98  25 99	< 1		< 1	NOT SAMPLE			
08/2 11/1 02/2 05/2 08/1 12/1 03/2 06/3	26 98  18 98  25 99	< 1	:1)					
11/1 02/2 05/2 08/1 12/1 03/2 06/3	18 98  25 99	< 1	1		< 3	< 6	NA	< 0.05
02/2 05/2 08/1 12/1 03/2 06/3	125/99			< 1	< 3	< 6	NA	< 0.05
05/2 08/1 12/1 03/2 06/3 09/1			< 1	< 1	< 3	< 6	NA	< 0.05
08/1 12/1 03/2 06/3 09/1	127/99	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
12/1 03/2 06/3 09/1	,_,,,_,	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
03/2 06/3 09/1	19/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
06/3 09/1	110/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
09/1	29/00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	/30/00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
03/2	118/00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA NA
	27/01	_			NOT SAMPLE	D		
06/1	114/01			· · · · · · · · · · · · · · · · · · ·	NOT SAMPLE	D		
. 09/1	/11/01				NOT SAMPLE	D		
12/1	114/01				NOT SAMPLE	D		
03/1	/14/02	_			NOT SAMPLE	D		
06/0	06/02				NOT SAMPLE	D		
09/2	123/02				NOT SAMPLE	D		
12/1	19/02				NOT SAMPLE	D		
03/2	/20/03				NOT SAMPLE	Đ		
06/1	17/03				NOT SAMPLE	D		
09/1	147100				NOT SAMPLE	D		

			CONC	ENTRATIONS	S in ug/L		ugiL	mg/L
MONITORING WELL ID	SAMPLE Date	BENZENE	TOLUENE	3N3ZN3R1HATB	TOTAL XYLENES	TOTAL BTEX	METHYL TERT BUTYL ETHER	TOTAL PETROLEUM HYDROCARBONS - Gro
MW-17S	02/23/98		-		NOT SAMPLI	ED		
i	05/13/98	< 1	<1	< 1	< 3	< 6	NA	< 0.05
	08/26/98	< 1	<1	<1	< 3	< 6	NA	< 0.05
	11/18/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
	02/25/99	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
	05/27/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	08/19/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	12/10/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	03/29/00	< 5.0	< 5.0	6	< 5.0	6	< 5.0	NA
	06/30/00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	09/18/00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
1	03/27/01				NOT SAMPLI	ED		
	06/14/01				NOT SAMPL	ED		
1	09/11/01				NOT SAMPLE	ED		
]	12/14/01				NOT SAMPLI	ED		
	03/14/02				NOT SAMPL	ED		
1	06/06/02				NOT SAMPL	ED		
	09/23/02				NOT SAMPLI	ED		
	12/19/02			••	NOT SAMPL	ED		
	03/20/03				NOT SAMPLE	ED		
	06/17/03				NOT SAMPLE	ED		
	09/17/03				NOT SAMPLI	ED		
					-		-	
]								

																			·				G9-MW	MONITORING Well JD	
	09/17/03	06/17/03	03/20/03	12/19/02	09/23/02	06/06/02	03/14/02	12/14/01	09/11/01	06/14/01	03/27/01	09/18/00	06/30/00	03/29/00	12/10/99	08/19/99	05/27/99	02/25/99	11/18/98	08/26/98	05/14/98	02/23/98	12/29/97	SAMPLE DATE	
	160	120	170	< 250		210	170	170	< 250	260	< 500	660	340	330	860	770	690	400	1,800	1,300	570	380	830	BENZENE	
	008	430	690	< 250		880	970	960	870	990	1,900	4,600	2,000	2,600	3,100	9,100	3,700	3,200	9,000	7,600	4,700	2,400	4,400	TOLUENE	CONC
	1,500	1,300	1,800	3,100	NOT SAMPI	1,700	2,300	2,100	1,900	1,900	3,100	2,600	1,900	1,600	3,900	3,000	2,600	1,200	3,400	2,100	1,700	660	2,700	ETHYLBENZENE	CONCENTRATIONS in ug/L
	14,000	14,000	19,000	4,100	NOT SAMPLED (INSUFFICIENT VOLUME)	15,000	15,000	21,000	16,000	12,000	17,000	22,000	16,000	20,000	22,000	25,000	21,000	17,000	21,000	19,000	17,000	8,800	19,000	TOTAL XYLENES	in ug/L
	16,160	15,850	21,660	7,200	HENT VOLUM	17,790	18,440	24,230	18,770	15,150	22,000	29,860	20,240	24,530	29,860	37,870	27,990	21,800	35,200	30,000	23,970	12,240	26,930	TOTAL BTEX	
	< 5.0	< 50	< 50	< 250		28	50	24	< 250	63	<500	<500	95	< 250°	< 500°	88	150	NA	NA	NA	NA	NA	AN	METHYL TERT BUTYL ETHER	սց/Լ
	NA	NA	NA	NA		NA	NA	NA	AA	NA	NA	NA	A	NA	NA	NA	NA	4	54	47	50.0	31	51	TOTAL PETROLEUM HYDROCARBONS - GRO	ngiL

			CONC	ENTRATIONS	in ug/L		ugļi,	mg/L
MONITORING WELL ID	SAMPLE Date	BENZENE	TOLUENE	ETHYLBENZENE	TOTAL XYLENES	TOTAL BTEX	METHYL TERT BUTYL ETHER	TOTAL PETROLEUM HYDROCARBONS - GRO
MW-8D	09/24/93	< 0.2	< 0.5	< 0.8	< 1.7	< 3.2	NA	< 100
	12/20/94	< 0.5	< 1.0	< 1.0	< 2.0	< 4.5	NA	< 0.1
	12/29/97	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
	02/23/98				NOT SAMPLI	D		
	05/13/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
	08/26/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
	11/18/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
	02/25/99	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
	05/27/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	08/19/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0_	< 5.0	NA
	12/10/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	03/29/00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	06/30/00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	09/18/00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA .
	03/27/01				NOT SAMPLI	ED		
	06/14/01				NOT SAMPLI	ED		
,	09/11/01				NOT SAMPL	ED		
	12/14/01				NOT SAMPLE	ED		
	03/14/02				NOT SAMPL	ED		
	06/06/02				NOT SAMPL	ED		
	09/23/02				NOT SAMPL	ED		
	12/19/02				NOT SAMPL	ED		
	03/20/03				NOT SAMPLE	ED		
The state of the s	06/17/03				NOT SAMPLI	ED		
					NOT SAMPLI			

																					_			OG-MW	MONITORING Well ID	
09/17/03	06/17/03	03/20/03	12/19/02	09/23/02	06/06/02	03/14/02	12/14/01	09/11/01	06/14/01	03/27/01	09/18/00	06/30/00	03/29/00	12/10/99	08/19/99	05/27/99	02/25/99	11/18/98	08/26/98	05/14/98	02/23/98	12/29/97	12/20/94	06/27/91	SAMPLE Date	
.18	19	15	< 50	49	28	29	48	860	40	130	1,900	41	87	21	1,900	170	470	2,600		270	110	100	3,600	18,800	BENZENE	
30	110	5	<50	ယ	73	20	<5.0	29	32	260	370	6	9	7	150	86	1,100	2,000		8	15	34	4,500	46,200	TOLUENE	CONC
110	350	54	88	32	230	97	220	920	73	750	2,300	130	640	39	2,700	290	3,800	2,200		59	420	200	2,100	2,950	ETHYLBENZENE	CONCENTRATIONS in ug/L
140	830	70	430	44	600	120	7	260	78	1,800	2,700	93	380	35	2,300	360	8,600	4,000	NOT SAMPLED	97	470	200	7,200	31,200	TOTAL XYLENES	in ug/L
298	1,309	144	518	128	931	266	275	2,069	223	2,940	7,270	270	1,116	102	7,050	906	13,970	10,800		434	1,015	534	17,400	99,150	TOTAL BTEX	
<5.0	<5.0	<5.0	< 50	<u>^</u>	17	6	9	8	55	< 50	53	12	32	< 5.0	< 50	< 100	NA	NA		NA	NA	NA	NA	NA	METHYL TERT BUTYL ETHER	Jigu
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26	18		1.4	2.4	2	46	99.0	TOTAL PETROLEUM HYDROCARBONS - GRO	mg/L

[			CONC	ENTRATIONS	S in ug/L		ugiL	mg/L
MONITORING WELL ID	SAMPLE Date	BENZENE	TOLUENE	ETHYLBENZENE	TOTAL XYLENES	TOTAL BTEX	METHYL TERT BUTYL ETHER	TOTAL PETROLEUM HYDROCARBONS . GRO
MW-10D	12/29/97	110	1,700	900	11,000	13,710	NA	30
<b>{</b>	02/23/98	160	2,500	570	5,800	9,030	NA	19
1	05/14/98	100	2,500	760	5,600	8,960	NA	21.0
	08/26/98	80	1,100	630	9,400	11,210	NA	26
	11/18/98				NOT SAMPL	ED		
	02/25/99	80	560	810	5,800	7,250	NA NA	43
	05/27/99	< 100	850	290	9,700	10,840	< 100	NA
	08/19/99				NOT SAMPLE	ED		
l i	12/10/99	33	960	780	16,000	17,773	12	NA
1	03/29/00	< 50	240	260	3,700	4,200	< 50	NA
	06/30/00	< 50	190	160	6,000	6,350	< 50	NA
1	09/18/00	< 50	1,300	1,100	27,000	29,400	<50	NA
	03/27/01	< 50	1,900	1,200	9,500	12,600	< 50	NA
	06/14/01	< 50	130	210	6,000	6,340	<50	NA .
<b>]</b>	09/11/01	<250	650	320	2,700	3,670	< 250	NA
	12/14/01	25	1,400	490	4,200	6,115	9	NA
	03/14/02	< 5.0	< 5.0	< 5.0	39	39	< 5.0	NA
[	06/06/02	8	160	190	2,300	2,658	9	NA
<b>j</b>	09/23/02	<20	510	160	2,710	3,380	< 20	NA
1	12/19/02	< 250	550	< 250	1,600	2,150	< 250	NA .
	03/20/03	< 50	1,700	870	5,600	8,170	< 50	NA
	06/17/03		NOT SA	MPLED - Due	to rain event	washing over		
[	09/17/03	< 5.0	78	46	1,200	1,324	< 5.0	NA ·
				L				

	[		CON	CENTRATIONS	S in ug/L		ug/L	mg/L
MONITORING WELL ID	SAMPLE Date	BENZENE	TOLUENE	ETHYLBENZENE	TOTAL XYLENES	TOTAL BTEX	METHYL TERT BUTYL ETHER	TOTAL PETROLEUM HYDROCARBONS · Gro
MW-11D	06/27/91	< 2	< 2	< 2	3	3	NA	0.8
	12/29/97	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
1	02/23/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
İ	05/14/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
1	08/26/98	< 1	< 1	< 1	. 3	3	NA	< 0.05
	11/18/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
	02/25/99	< 1	1	5 .	11	17	NA	0.06
]	05/27/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
1	08/19/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	12/10/99	< 5.0	< 5.0	< 5.0	11	11	< 5.0	NA
1	03/29/00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
1	06/30/00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	09/18/00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	03/27/01				NOT SAMPLI	ED		
1	06/14/01				NOT SAMPL	ED		_
	09/11/01				NOT SAMPLI	ED		
1	12/14/01				NOT SAMPL	ED		
1	03/14/02				NOT SAMPLI			
]	06/06/02				NOT SAMPLI		<del></del>	
1	09/23/02				NOT SAMPLI			
	12/19/02				NOT SAMPLI			
]	03/20/03				NOT SAMPLI			
]	06/17/03				NOT SAMPLE			
1	09/17/03		<del></del> -		NOT SAMPL	:U	<del></del>	~

			CONC	ENTRATION	S in ug/L	<del></del>	ug/L	mg/L
MONITORING WELL ID	SAMPLE DATE	BENZENE	TOLUENE	3N3ZN3B1AH13	TOTAL XYLENES	TOTAL BTEX	METHYL TERT BUTYL ETHER	TOTAL PETROLEUM HYDROCARBONS - GRO
MW-12D	06/27/91	249	45	41	291	626	NA	< 0.5
1	12/20/94	15	3	5	18	41	NA	0.38
}	12/29/97	6	< 1	5	. 8	19	NA	< 0.05
İ	02/23/98	4	< 1	2	< 3	6	NA	< 0.05
	05/14/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
1	08/26/98	19	6	70	39	134	NA	0.2
1	11/18/98	13	< 1	39	15	67	NA	0.11
1	02/25/99	6	< 1	4	5	15	NA	< 0.05
	05/27/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	08/19/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	12/10/99	< 5.0	< 5.0	< 5.0	6	6	< 5.0	NA
	03/29/00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	06/30/00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
1	09/18/00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
]	03/27/01		_		NOT SAMPL	ED		
	06/14/01				NOT SAMPLI	ED		
	09/11/01				NOT SAMPLI	ED		
	12/14/01				NOT SAMPL	ED		
	03/14/02				NOT SAMPL	ED		
	06/06/02				NOT SAMPLI	ED		
	09/23/02				NOT SAMPL	ED		
[	12/19/02				NOT SAMPLE	ED		
	03/20/03				NOT SAMPL	ED		
	06/17/03				NOT SAMPLE	ED		
1 1	09/17/03	-			NOT SAMPLE	ED		
]							<del></del>	

			CON	CENTRATIONS	S in ug <u>l</u> L		ug/L	mg/L
MONITORING WELL ID	SAMPLE Date	BENZENE	TOLUENE	ETHYLBENZENE	TOTAL XYLENES	TOTAL BTEX	METHYL TERT BUTYL ETHER	TOTAL PETROLEUM HYDROCARBONS - GRO
MW-130	06/27/91	10	< 2	< 2	< 2	10	NA	0.6
	12/29/97	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
	02/23/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
}	05/14/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
	08/26/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
	11/18/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
1	02/25/99	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
1	05/27/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
1	08/19/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	12/10/99				NOT SAMPLI	ED		
	03/29/00				NOT SAMPLI	ED		
	06/30/00			NOT SAMP	LED- Covered	with pallets.		
	09/18/00			NOT SAMP	LED- Covered	with pallets.		
]	03/27/01				NOT SAMPL	D	· 	
	06/14/01				NOT SAMPLI	ED		
	09/11/01		_		NOT SAMPLI	ED		
1	12/14/01				NOT SAMPL	ED		
	03/14/02				NOT SAMPLI	ED		
	06/06/02				NOT SAMPLE	ED		
	09/23/02				NOT SAMPL	ED		
	12/19/02				NOT SAMPLI	ED		
	03/20/03				NOT SAMPLI	ED		
1	06/17/03				NOT SAMPLE	B		
	09/17/03				NOT SAMPLI	D		
]								

	-		CON	CENTRATIONS	in ug/L		ug/L	mg/L			
MONITORING Well ID	SAMPLE Date	BENZENE	TOLUENE	ETHYLBENZENE	TOTAL XYLENES	TOTAL BTEX	METHYL TERT BUTYL ETHER	TOTAL PETROLEUM HYDROCARBONS . Gro			
MW-14D	06/27/91	21	< 2	< 2	3	24	NA	20.5			
	12/20/94	1	27	30	290	348	NA	4.9			
	12/29/97	< 1	< 1	< 1	< 3	< 6	NA	< 0.05			
	02/23/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05			
	05/14/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05			
	08/26/98			DRY	WELL (not sa	mpled)					
1	11/18/98			DRY	WELL (not sa	mpled)	,	_			
	02/25/99	< 1	< 1	< 1	< 3	< 6	NA	< 0.05			
	05/27/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA			
	08/19/99			DRY	WELL (not sa	mpled) ·					
ł	12/10/99		, <del></del>		WELL (not sa						
	03/29/00	< 5.0	< 5.0	< 5.0	37	37	< 5.0	NA			
	06/30/00			DRY	WELL (not sa	mpled)					
	09/18/00			DRY	WELL (not sa						
}	03/27/01				NOT SAMPLI						
	06/14/01				NOT SAMPLI						
	09/11/01			_	NOT SAMPLI						
	12/14/01				NOT SAMPLI						
	03/14/02				NOT SAMPLI						
1	06/06/02				NOT SAMPLI						
	09/23/02				NOT SAMPLI	·					
{	12/19/02				NOT SAMPLI						
]	03/20/03				NOT SAMPLI						
]	06/17/03				NOT SAMPLI						
	09/17/03	NOT SAMPLED									
					<u></u>						

			CONC	ENTRATIONS	S in ug/L		ug/L	mg/L
MONITORING WELL ID	SAMPLE DATE	BENZENE	TOLUENE	ETHYLBENZENE	TOTAL XYLENES	TOTAL BTEX	METHYL TERT BUTYL ETHER	TOTAL PETROLEUM HYDROCARBONS - Gro
MW-15D	11/12/92	17	3.9	< 0.8	5.7	26.6	NA	< 0.05
	12/20/94	1	< 1.0	< 1.0	< 2.0	1	NA	< 0.1
	12/29/97	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
1	02/23/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
	05/13/98	< 1	<1	< 1	< 3	< 6	NA	< 0.05
j	08/26/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
	11/18/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
	02/25/99	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
	05/27/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
1	08/19/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
Í	12/10/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
1	03/29/00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
ŀ	06/30/00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
]	09/18/00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	03/27/01				NOT SAMPL	ED		
	06/14/01				NOT SAMPL	ED		
	09/11/01				NOT SAMPLE	ED		
	12/14/01				NOT SAMPL	ED		
	03/14/02				NOT SAMPL	ED		
1	06/06/02				NOT SAMPL	ED		
	09/23/02				NOT SAMPL	ED		
	12/19/02				NOT SAMPL	ED		
	03/20/03				NOT SAMPL	ED		
	06/17/03				NOT SAMPL	ED		
1	09/17/03				NOT SAMPL	ED		

			CON	ENTRATIONS	S in ug/L	<del></del>	ug/L	mg/L
MONITORING Well ID	SAMPLE Date	BENZENE	TOLUENE	ETHYLBENZENE	TOTAL XYLENES	TOTAL BTEX	METHYL TERT BUTYL ETHER	TOTAL PETROLEUM HYDROCARBONS . GRO
MW-16D	11/12/92	5,400	< 10	500	< 34	5,900	NA	3.8
1	12/20/94	< 0.5	< 1.0	< 1.0	< 2.0	< 4.5	NA	< 0.1
	12/29/97	< 1	< 1	< 1	< 3	< 6	NA NA	< 0.05
	02/23/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
	05/13/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
	08/26/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
	11/18/98	< 1	< 1	< 1	< 3	< 6	NA	< 0.05
	02/25/99	< 1	< 1	<1	< 3	< 6	NA	< 0.05
1	05/27/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	08/19/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	12/10/99	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
	03/29/00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	NA
1	06/30/00		NOT SAN	IPLED- <i>Not lac</i>	ated due to o	vergrowth of	vegetation.	
1	09/18/00		NOT SAN	APLED-Not loc	ated due to o	vergrowth of	vegetation.	
	03/27/01				NOT SAMPLI	D		
1	06/14/01				NOT SAMPLI	ED		
1	09/11/01				NOT SAMPL	ED		
]	12/14/01				NOT SAMPL	ED		
	03/14/02				NOT SAMPLI	D		
	06/06/02				NOT SAMPLI	ED .		
	09/23/02				NOT SAMPLI	ED .		
]	12/19/02				NOT SAMPLI	ED .		
	03/20/03				NOT SAMPLE	D		
	06/17/03				NOT SAMPLE	D		
j i	09/17/03	· .			NOT SAMPLE	D		

			CONC	ENTRATIONS	S in ug/L		ug/L	mg/L		
MONITORING WELL ID	SAMPLE DATE	BENZENE	TOLUENE	ETHYLBENZENE	TOTAL XYLENES	TOTAL BTEX	METHYL TERT BUTYL ETHER	TOTAL PETROLEUM HYDROCARBONS · GRO		
MW-18D	09/23/02	<1	<1	<1	<1	<1	<1	<1		
<b>.</b>	12/19/02				NOT SAMPL	ED				
1	03/20/03				NOT SAMPL	ED				
· .	06/17/03				NOT SAMPL	ED				
]	09/17/03				NOT SAMPL	ED				
MW-19D	09/23/02	<1	<1	<1	<1	<1	<1	<1		
	12/19/02	NOT SAMPLED								
1	03/20/03				NOT SAMPL					
}	06/17/03				NOT SAMPL					
ŀ	09/17/03				NOT SAMPLI	ED	· · · · · · · · · · · · · · · · · · ·			
.								ļi		
1011.000	aciaciae							<del></del>		
MW-20D	09/23/02	<1	<1	<1	<1	<1	<1	<1		
1	12/19/02				NOT SAMPLI					
1	03/20/03				NOT SAMPLE					
	06/17/03				NOT SAMPLE					
1	09/17/03	-			NOT SAMPL					
				-						
		'								

## WHEELING PITTSBURGH STEEL CORPORATION MARTINS FERRY, OHIO

	T	<u> </u>	CON	CENTRATION	S in ug/L		ug/L	mg/L
MONITORING WELL ID	SAMPLE DATE	BENZENE	TOLUENE	ETHYLBENZENE	TOTAL XYLENES	TOTAL BTEX	METHYL TERT BUTYL ETHER	TOTAL PETROLEUM HYDROCARBONS . GRO
RW-1D	12/29/97		-		NOT SAMPL	ED		
ļ	02/23/98		•		NOT SAMPL	ED		
<u> </u>	05/13/98				NOT SAMPL	ED		
	08/26/98	150	56	2,000	370	2,576	NA	9.2
[	11/18/98	260	93	1,900	720	2,973	NA	12
{	02/25/99	110	120	2,700	2,100	5,030	NA	15
	05/27/99	15	< 5.0	95	16	126	5	NA
1	08/19/99	780	73	1,500	400	2,753	20	NA NA
	12/10/99	80	< 5.0	460	31	571	14	NA
1	03/29/00	88	75	4,400	3,000	7,563	27	NA
]	06/30/00	180	130	5,100	3,800	9,210	73	NA
i	09/18/00	58	49	4,100	2,900	7,107	34	NA
	03/27/01	110	120	3,900	3,400	7,530	< 50	NA
	06/14/01	< 50	66	3,200	2,800	6,066	< 50	NA
	09/11/01	66	36	3,100	1,800	5,002	35	NA
	12/14/01	83	40	3,700	1,900	5,723	26	NA
	03/14/02	52	36	3,100	1,300	4,488	30	NA
	06/06/02	52	37	2,300	1,200	3,589	40	NA
	09/23/02	< 100	< 100	3,200	1,400	4,600	< 100	NA
	12/19/02	< 250	< 250	3,600	2,000	5,600	< 250	NA
	03/20/03	< 25	< 25	2,200	950	3,150	< 25	NA
	06/17/03	< 25	31	3,000	1,500	4,531	< 25	NA
	09/17/03	15	19	2,800	900	3,734	< 5.0	NA
l								

### Notes:

- Samples collected from December 1997 to February 1999 and from June 2001 to June 2002 for analyses for Benzene, Toluene, Ethylbenzene, and total Xylenes were analyzed via EPA Method 8021 and Total Petroleum Hydrocarbons via the API Method.
- Samples collected in May 1999 and from December 2002 to present for analyses for Benzene, Toluene, Ethylbenzene, total Xylenes and MTBE were analyzed via EPA Method 8260.
- Samples collected in September 2002 for analyses for Benzene, Toluene, Ethylbenzene, total Xylenes and MTBE were analyzed via EPA Method 602.
- 4) Sample results obtained prior to September 24, 1993 were initially reported by John Mathes and Associates in the "Phase II Site Assessment" dated August 1991 and the "Site Assessment Report" dated December 1990.
- 5) NA Not Analyzed.
- 6) The elevated detection limits in some samples is caused by high levels of BTEX in the sample.

NOV 1 3 1992

E. C. Sambuco Director-Engineering (304) 234-2577

November 11, 1992

Mr. Harold Strohmeyer Control Engineer NOVAA 814 Adams Street Steubenville, Ohio 43952-2729

Re: Martins Ferry Plant
Contaminated UST site

Dear Mr. Strohmeyer:

A request to conduct a temporary trial of a soil vent/air sparge system at the contaminated UST site at the Martins Ferry Plant of Wheeling-Pittsburgh Steel Corporation has been granted by the Ohio EPA.

The letter from the Ohio EPA granting the request had several stipulations that must be followed. One of the stipulations states that NOVAA should be notified when beginning and completing the operation. This letter therefore serves as notification that the testing is scheduled to begin on Tuesday, November 17, 1992 and is expected to take two days to complete. Plans are to begin hooking up the equipment at 8 AM and the trial will begin when all preliminary steps are completed, estimated to be sometime between 8 AM and 10 AM. If there are any changes to the start date, you will be notified.

If you should have any questions concerning this letter, please call us.

Very truly yours,

WHEELING-PITTSBURGH STEEL CORP.

Errol C. Sambuco Director-Engineering

bcc: W. Heckman

W. Kent

L. Boroski

W. Pysh

W. Hursen

R. Lewis

™/MFile /

### INTEROFFICE CORRESPONDENCE

Date: September 30, 1992

From: R. E. Lewis

To: W. Samples

W. Hursen

W. Pysh

L. Boroski

T. Waligura

Re: SOIL VENT/AIR SPARGE PILOT TEST STUDY AT MF UST SITE

A request was made to three Ohio State agencies for approval to conduct a pilot test study to determine whether a soil vent/air sparge system is an acceptable method to remediate the contaminated soil and groundwater at the contaminated UST site at the Martins Ferry Plant.

The attached letters from the agencies have been received and the pilot test is intended to take place in the near future. The test study is to be conducted by GTI, Inc. Their proposal dated July 10, 1992 is attached.

Your presence is requested at a meeting to be held with GTI, Inc. representatives at 10 AM on 10-13-92 at the Martins Ferry Plant Engineering conference room. The purpose of the meeting is to discuss the project in detail to be assured that all involved parties understand the total scope of the project.

If you should have any questions concerning this memo, please call.

cc: E. C. Sambuco

R. E. Vogel

D. L. Del Guzzo

P.O. Box 1049, 1800 WaterMark Dr. Columbus, Ohio 43266-0149 (614) 644-3020 FAX (614) 644-2329 George V. Voinovich
Governor

Donald R. Schregardus
Director

Mr. Errol Sambuco Wheeling-Pittsburgh Steel 1134 Market Street Wheeling, WV 26003 Environmental Control

September 25, 1992

Dear Mr. Sambuco:

I have received your April 28, 1992 and August 4, 1992 letters requesting permission to conduct a temporary soil vent/air sparge system on a trial basis to determine the effectiveness of the operation for the cleanup of petroleum contaminated soil and ground water at the Wheeling-Pittsburgh plant in Martins Ferry, Ohio.

All sources of air emissions require permits, with a few exceptions. It is required that air sources such as this obtain either a permit to install (PTI) or an exemption from the requirement for a PTI in accordance with OAC 3745-31-03 and 31-05 from our Division prior to conducting any activity. Some air sources, such as trial operations and the cleanup of soil or water contaminated by leaking petroleum UST sites may, at our discretion, be exempted depending upon the particular circumstances.

We have considered your request to conduct the operation on a temporary trial basis under the exemption allowed by OAC 3745-31-03(A). Your request is granted, provided you comply with the following stipulations:

- 1. The operation of the soil vent/air sparge system shall be consistent with the information submitted.
- The duration of the operation shall be limited to five (5) days.
- The uncontrolled Volatile Organic Compound (VOC) air emissions shall not exceed 1.76 pounds per day. The carbon control should be utilized whenever the source is in operation. Emission control, with equipment such as a carbon adsorption system, may likely be required for future, permanent operation of the source under a PTI.
- 4. This letter does not exempt the source from compliance with any other applicable regulations.
- 5. Emissions of fugitive dust from the roadways and site activities shall be minimized.

- 6. You should notify the North Ohio Valley Air Authority (NOVAA) at (614) 282-3908 when beginning and completing the operation.
- 7. Any excavated soil must be kept on an impervious material to prevent migration of contaminants into the soil and ground water below. The area shall be contained to prevent any runoff of water from the remediation site.
- 8. The sampling should be conducted as described in your submittal. In order to obtain a PTI, the potential VOC emissions in pound per hour and pounds per day must be known. You should confirm these emissions during the trial and provide documentation with your PTI application.
- 9. If the operation of the system causes an air pollution nuisance, it must be discontinued.
- 10. This exemption will expire December 31, 1992.

If you have any questions, please contact Misty Parsons of my staff at (614) 644-2270.

Sincerely,

Robert Hodanbosi

Chief, Division of Air Pollution Control

RH/MP/sk

cc: Dick Lewis

Wheeling-Pittsburgh Steel

219 Public Road

Yorkville, Ohio 43971

Harold Strohmeyer, NOVAA

Division of State Fire Marshal • Bureau of Underground Storage Tank Regulations 8895 E. Main St., P.O. Box 687 • Reynoldsburg, OH 43068-0687 (614) 752-7938 • FAX (614) 752-7942

Nancy S. Chiles, Director

September 21, 1992

Mr. Richard Lewis Wheeling Pittsburgh Steel 1134 Market Street Wheeling, WV 26003 HARD CONTROL RE:

Wheeling Pittsburgh Steel 1001 Main Street Martins Ferry, OH 43937 Belmont County Incident #0702394-01

Dear Mr. Lewis:

The State Fire Marshal, Bureau of Underground Storage Tank Regulation has reviewed the work plan describing a pilot test to evaluate the feasibility and design of a remediation system at the Martins Ferry Plant. You have indicated that elements of a soil vapor extraction and air sparging system will be installed which may be included in a proposed Corrective Action Plan (CAP). For this reason, you have requested pre-approval of vapor extraction and air sparging for the CAP.

The State Fire Marshal (SFM) does not, at this point, have any reason for objecting to the use of the aforementioned remediation technologies at the site. The SFM recognizes that these technologies have value in the remediation of high volatile content petroleum releases. In determining whether to approve the actual CAP, the SFM will consider whether assurances have been provided by the owner/operator that implementation of the plan will adequately protect human health, safety, and the environment.

The owner/operator should evaluate, to the present extent possible, whether the technologies being used in the pilot test will provide such assurances. In evaluating whether the proposed remedial technologies meet this requirement, the owner/operator must consider at least, the characteristics of the petroleum substance, the hydrogeologic character of the area, the current and future uses of ground and surface water, and possible adverse effects due to migration of vapors or product induced by the remediation system.

After the pilot test, the technologies must be re-evaluated for application to the site. The full scale CAP can then be developed and submitted to the SFM for review and approval. The CAP must explain how assurances for protection of human health, safety and the environment will be provided.

To assist our office in expediting a review of you correspondence please reference the incident number (0702394-01) and place it in the upper right hand corner of all your correspondence. Thank you for your cooperation, and if you have any questions regarding this matter, please call Joe Jellick at (614) 752-7096.

Sincerely,

Kevin W. Hodnett, Supervisor

**Corrective Actions** 

KH:aw

cc: File #0702394-01



## Petroleum Underground Storage Tank Release Compensation Board



P.O. Box 2040, Columbus, Ohio 43216 Phone: (614) 752-8963 Fax: (614) 752-8397 F. William Englefield, III, Chairman Richard C. Murray, Executive Director

August 24, 1992

Mr. Errol Sambuco Wheeling Pittsburgh Steel Corp. 1134 Market Street Wheeling, WV 26003

> OWNER NUMBER: 11587 SFMI NUMBER: 0702394-00 RELEASE SITE ADDRESS: Martins Ferry Plant Martins Ferry, OH

Dear Mr. Sambuco:

The Board has recently received your proposed work plan and correspondence for the above-referenced site. You have been actively working with both Ohio EPA and the State Fire Marshal on this site, preparing for a pilot study of an air sparging system. At the request of Joseph Jellick with the State Fire Marshal's office, the Petroleum Underground Storage Tank Release Compensation Board was asked to review the work plan for the pilot study and make any comments on it.

We have reviewed the information that was originally sent and the additional information that was subsequently sent to us for review. To begin with, please be aware of the following:

- The Bureau of Underground Storage Tank Regulation (BUSTR) is the agency responsible for implementing the UST laws and corrective action rules in Ohio. They are the regulatory agency for which approval of any of a corrective action work plan is needed. The Ohio Environmental Protection Agency may also be involved from an air permitting stand point.
- The Petroleum Board encourages tank owners to allow us to co-review with BUSTR work plans and corrective action plans. We review the work plans for compliance with Board rules pertaining to reimbursement of expenses for eligible corrective action work and we encourage UST owners to competitively bid tasks of work, subcontracted work, and subcontracted services when practical and feasible.

Information was sent to the Board that included a descriptive work plan for a remedial investigation and pilot test of an air sparging system at the Martins-Ferry Plant. The system that was described was detailed enough to evaluate it against the general cost estimate of approximately \$89,000.00. From my experience, it appears that the overall cost for the work described in the April 1992 work plan falls within the expected range of costs for such work.

A pilot study inherently appears to have somewhat higher costs due to the fact that the system operates for a short time and that capital investment in equipment, machinery, and permit applications has to be made. If the pilot test is successful, that equipment, machinery and permit application work can be applied in the overall operational phase of the project, thereby lowering the cost of the actual clean up.

If you have any questions about the Board's reimbursement policies or require any additional review, please contact me at (614) 752-8963.

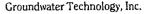
Sincerely,

John Voytek/CPG
Chief Claims Reviewer

cc: Mr. R. E. Lewis

cc: Mr. Joseph Jellick

11587001.RAW





202 Commerce Park Drive. Zelienople, PA 16063 Tel: (412) 776-4700 Fax: (412) 776-4711

July 10, 1992

Mr. Richard E. Lewis
Environmental Coordinator
Wheeling-Pittsburgh Steel Corporation
Engineering Trailer YK17
219 Public Road
Yorkville, Ohio 43971

RE:

Air Sparge/Soil Vent Test Air Emissions, Wheeling-Pittsburgh Steel Corporation, Martins Ferry, Ohio Plant.

Dear Mr. Lewis:

Groundwater Technology has investigated the emissions associated with the performance of the air sparge/soil vent test, and adjusted the test protocol (Attachment I) to comply with state emissions limits of 15 lbs/day. The planned operation time for each test stage has been reduced from two hours to one hour. This reduction results in a total operating time of 6 hours. Operating time refers to time which air emissions will occur.

The test protocol is designed to serve as guidance for conducting the soil vent/air sparge test. As with any field work, on-site conditions may require that the test protocol be adjusted. For example, if vacuum influence is not detected in the vapor monitoring probes after one (1) hour, and VOC concentrations are low, the test stage may be run for two (2) hours to examine the effects of a longer operating time on vacuum influence. On the other hand, if vacuum influence is detected rapidly and VOC concentrations are high, the test stage may be discontinued at less than one (1) hour duration. These in-field changes will be performed in a manner to maintain compliance with air discharge requirements.

In order to reduce VOC emissions during the test, Groundwater Technology has added vapor treatment of the extracted soil vapor using activated carbon. Four (4) 55 gallon drums of activated carbon will be used to treat the extracted soil vapor prior to discharge. Each drum contains 150 lbs of activated carbon for a total of 600 lbs. The activated carbon has the capability of adsorbing 60 lbs. of hydrocarbons, assuming carbon adsorption capacity of 10%.

Also, as you requested, Groundwater Technology has attempted to estimate volatile organic compound (VOC) emissions during the test. In order to estimate VOC discharge, Groundwater Technology has calculated discharge rates for several VOC concentrations. The calculations are provided as Attachment II.

Mr. Richard E. Lewis July 10, 1992 Page 2

As shown, with vapor treatment, the soil vent system may operate at over 20,000  $\mu$ g/L VOC influent concentration @ 100 CFM while meeting effluent limits. From past investigations at the Martins Ferry facility, the maximum concentration of VOC's measured in the soil gas was 812  $\mu$ g/L during the soil gas survey performed in August 1991. Through examining the soil and groundwater data collected in previous investigations and expected test operating conditions, Groundwater Technology believes that the test may be performed within discharge limits set by the state.

Groundwater Technology's protocol for monitoring air discharge from the soil vent test is to use a field monitoring instrument such as a flame ionization detector (FID). The field monitoring instrument is used to obtain an immediate reading of hydrocarbon discharge. Air bag samples are typically collected to analytically confirm field readings. Some discrepancies typically occur between laboratory and field results. In order to account for these discrepancies, a safety factor of 2 is typically used to correlate field measurements to laboratory results. In order to ensure compliance to the discharge limits, an operating curve (Attachment III) was prepared. The operating curve shows the limits which the system may be operated in compliance with discharge limits. This curve is based on 24 hours of operation. Actual discharge is obtained by multiplying by the actual discharge time. All operating points below the curve are within compliance.

If at any time during the test Groundwater Technology personnel believe the operating parameters may exceed discharge limits, appropriate steps will be taken to ensure compliance. These steps may include, but are not limited to: gauge back VOC discharge, reduce applied vacuum or shorten test operations. Please do not hesitate to contact Tim Havranek or me at (412) 776-4700 if you should have any questions or comments regarding the test procedure.

Sincerely,

GROUNDWATER-TECHNOLOGY, INC.

Matthew R. Brunner

Engineer

MRB:cif

Enclosure: Attachment I - Test Protocol

Attachment II - VOC Discharge Estimate

Attachment III - Operating Curve

cc: D. Dunkis, Wheeling-Pittsburgh Steel

L. Boroski, Wheeling-Pittsburgh Steel

T. Havranek, Groundwater Technology, Inc.

OC File

#348:lewis7.10



ATTACHMENT I

GROUNDWATER TECHNOLOGY

## WHEELING-PITTSBURGH STEEL CORPORATION AIR SPARGE TEST/SOIL VENT TEST AIR DISCHARGE

#### TEST PROTOCOL

Throughout the test, VOC concentrations will be monitored with a flame ionization detector (FID). Field VOC measurements will be extrapolated using the graph provided in Attachment III. Adjustments to the system or test termination may be implemented if emissions appear to exceed limits.

The protocol for the soil vent/air sparge test to be performed at the Martins Ferry Ohio Plant is presented below:

- Task 1 Install sparge point and monitoring probes. A vertical profile of adsorbed-phase constituents will be determined by measuring VOC concentrations in headspace with a FID. Screened interval will be set at depth of highest adsorbed-phase concentrations.
- Task 2 Background VOC concentrations will be measured in all monitoring probes using a FID.
- Task 3 Soil vent test will be initiated using test flow rates projected at ≈ 15, 45 and 75 CFM. The soil vent test will be run at each flow rate for one hour. At each flow rate, monitoring probes will be monitored for vacuum increase and VOC concentrations. An air bag sample of the influent and effluent air will be collected for laboratory analysis during the 75 CFM flow rate to document compliance to state emissions limits.
- Task 4 Air sparge test will be initiated using test injection rates projected at 5, 10 and 20 CFM at ~ psi. The air sparge test will be run at each injection rate for one hour. At each flow rate, monitoring probes will be monitored for pressure increase and VOC concentrations. No air emissions will occur during the air sparge test.
- Task 5 The final part of the test includes combined operation of the soil vent and air sparge test systems. Three scenarios will be tested: Low vent/high sparge; high vent/low sparge; and high vent/high sparge. As before, vacuum/pressure readings and VOC concentrations will be measured during each test scenario. Each scenario will be run for one hour. An air bag sample of the influent and effluent air will be collected for laboratory analysis during the high vent/high sparge scenario to document compliance to state emission limits.



## ATTACHMENT II

## WHEELING PITTSBURGH STEEL CORPORATION MARTINS FERRY OHIO FACILITY

# AIR SPARGE/SOIL VAPOR EXTRACTION TEST VOC MASS REMOVAL RATE ESTIMATES

#### **ASSUMPTIONS:**

- AIR FLOW RATE = 100 SCFM
- 6 HOURS OF AIR DISCHARGE
- AIR TREATED WITH 600 LBS. ACTIVATED CARBON
- CARBON ADSORPTION CAPACITY = 10%
- CARBON VOC REMOVAL EFFICIENCY = 99%

#### **VOC MASS REMOVAL ESTIMATES:**

INFLUENT VOC CONCENTRATION (μg/L)	VOC REMOVAL RATE (LB/DAY)	VOC DISCHARGE RATE (LB/DAY)	TOTAL MASS VOC'S REMOVED (LBS)	TOTAL MASS ACTIVATED CARBON REQUIRED (LBS)
1,000	8.8	0.09	2.2	22
5,000	44.0	0.44	11.0	110
10,000	88.0	0.88	22.0	220
20,000	176.0	1.76	44.0	440

#### **SAMPLE CALCULATION:**

VOC REMOVAL RATE 1,000 μg/L 100 SCFM (ft³/min)

$$\frac{100ft^3}{\min} \frac{1440\min}{dav} \frac{28.32L}{ft^3} \frac{1000x10^{-8}g}{L} \frac{1/b}{453.5g} = \frac{8.8/b}{dav}$$

WHEELING PITTSBURGH STEEL CORPORATION MARTINS FERRY OHIO FACILITY

# AIR SPARGE/SOIL VAPOR EXTRACTION TEST VOC MASS REMOVAL RATE ESTIMATES

**VOC DISCHARGE RATE** 

99% CARBON REMOVAL EFFICIENCY

$$\frac{8.8 lbs}{day} \times \frac{99}{100} = \frac{0.09 lbs}{day}$$

TOTAL MASS VOC'S REMOVED

**6 HOURS OPERATION** 

$$6hrsx \frac{day}{24hrs} x \frac{8.8lbs}{day} = 2.2lbs$$

#### TOTAL MASS ACTIVATED CARBON REQUIRED

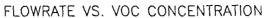
10% CARBON ADSORPTION EFFICIENCY

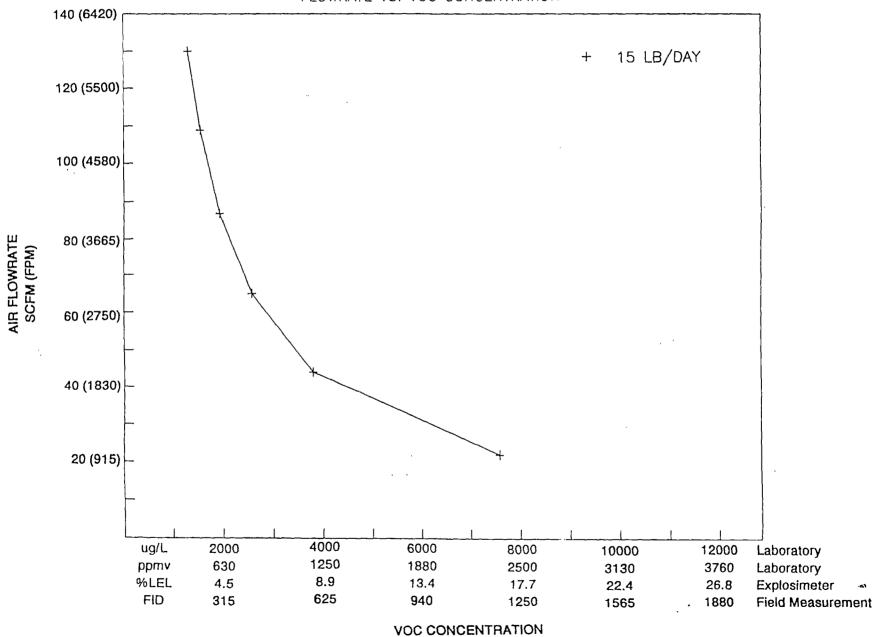
#MBA:WHEELVOC



## **ATTACHMENT III**

# WHEELING PITT STEEL - MARTINS FERRY, OH





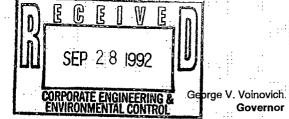


State of Ohio Environmental Protection Agency W. J. Hursen

P.O. Box 1049, 1800 WaterMark Dr. Columbus, Ohio 43266-0149 (614) 644-3020 FAX (614) 644-2329

P. K. Morrison W. R. Samples T. J. Waliqura





Donald R. Schregardus Director -

Mr. Errol Sambuco Wheeling-Pittsburgh Steel 1134 Market Street Wheeling, WV 26003

September 25, 1992

Dear Mr. Sambuco:

I have received your April 28, 1992 and August 4, 1992 letters requesting permission to conduct a temporary soil vent/air sparge system on a trial basis to determine the effectiveness of the operation for the cleanup of petroleum contaminated soil and ground water at the Wheeling-Pittsburgh plant in Martins Ferry, Ohio.

All sources of air emissions require permits, with a few exceptions. is required that air sources such as this obtain either a permit to install (PTI) or an exemption from the requirement for a PTI in accordance with OAC 3745-31-03 and 31-05 from our Division prior to conducting any activity. Some air sources, such as trial operations and the cleanup of soil or water contaminated by leaking petroleum UST sites may, at our discretion, be exempted depending upon the particular circumstances.

We have considered your request to conduct the operation on a temporary trial basis under the exemption allowed by OAC 3745-31-03(A). Your request is granted, provided you comply with the following stipulations:

- The operation of the soil vent/air sparge system shall be consistent with the information submitted.
- 2. The duration of the operation shall be limited to five (5) days.
- The uncontrolled Volatile Organic Compound (VOC) air emissions shall not exceed 1.76 pounds per day. The carbon control should be utilized whenever the source is in operation. Emission control, with equipment such as a carbon adsorption system, may likely be required for future, permanent operation of the source under a PTI.
- This letter does not exempt the source from compliance with any other applicable regulations.
- Emissions of fugitive dust from the roadways and site 5. activities shall be minimized.

- 6. You should notify the North Ohio Valley Air Authority (NOVAA) at (614) 282-3908 when beginning and completing the operation.
- 7. Any excavated soil must be kept on an impervious material to prevent migration of contaminants into the soil and ground water below. The area shall be contained to prevent any runoff of water from the remediation site.
- 8. The sampling should be conducted as described in your submittal. In order to obtain a PTI, the potential VOC emissions in pound per hour and pounds per day must be known. You should confirm these emissions during the trial and provide documentation with your PTI application.
- 9. If the operation of the system causes an air pollution nuisance, it must be discontinued.
- 10. This exemption will expire December 31, 1992.

If you have any questions, please contact Misty Parsons of my staff at (614) 644-2270.

Sincerely,

Robert Hodanbosi

Chief, Division of Air Pollution Control

RH/MP/sk

cc: Dick Lewis

Wheeling-Pittsburgh Steel

219 Public Road

Yorkville, Ohio 43971

Harold Strohmeyer, NOVAA



E. C. Sambuco Director-Engineering (304) 234-2577

August 4, 1992

Ohio EPA 1800 Watermark Drive P. O. Box 1049 Columbus, Ohio 43266-0149

Attention: Ms. Misty Parsons

Re: Wheeling-Pittsburgh Steel Corporation

Martins Ferry Plant Martins Ferry, Ohio

UST Confirmed Release Site

Incident # 0702394-00

#### Dear Misty:

In a letter dated 4-28-92 Wheeling-Pittsburgh Steel Corporation had submitted a request for a Permit to Install Exemption to conduct a test study for remediation of a contaminated Underground Storage Tank site.

You indicated in subsequent phone conversations that you required a figure of estimated emissions that are expected to be emitted and that if that figure is greater than 15# per day that the emissions must be controlled and reduced by 99%.

Wheeling-Pittsburgh Steel Corporation then contacted Groundwater Technology, Inc. informing them of your requirements. They responded by changing the test protocol and including a carbon treatment of the emissions. Their proposal is attached. It is believed that the new proposal satisfies your requirements and it is therefore asked that you give us permission to proceed with the test study.

WPSC UST Remediation-Permit request August 4, 1992 Page 2

Your prompt attention to this matter will be greatly appreciated. If you should have any questions concerning this letter, please call Mr. R. E. Lewis at (614) 859-6771.

Very truly yours,

WHEELING-PITTSBURGH STEEL CORP.

al O. Samburea

Errol C. Sambuco Director-Engineering

#### Attachments

cc: Mr. Harold Strohmeyer

NOVAA

814 Adam Street

Steubenville, Ohio 43952-2729

Mr. Joseph Jellick

Division of State Fire Marshal

BUSTR

7510 East Main Street

P.O. Box 525

Reynoldsburg, Ohio 43068-3395

bcc: R. Vogel

L. Boroski

W. Pysh

W. Hursen

R. Lewis

工题/MFile



Groundwater Technology, Inc.

202 Commerce Park Drive, Zelienople, PA 16063 Tel: (412) 776-4700 Fax: (412) 776-4711

July 10, 1992

Mr. Richard E. Lewis
Environmental Coordinator
Wheeling-Pittsburgh Steel Corporation
Engineering Trailer YK17
219 Public Road
Yorkville, Ohio 43971

RE:

Air Sparge/Soil Vent Test Air Emissions, Wheeling-Pittsburgh Steel Corporation, Martins Ferry, Ohio Plant.

Dear Mr. Lewis:

Groundwater Technology has investigated the emissions associated with the performance of the air sparge/soil vent test, and adjusted the test protocol (Attachment I) to comply with state emissions limits of 15 lbs/day. The planned operation time for each test stage has been reduced from two hours to one hour. This reduction results in a total operating time of 6 hours. Operating time refers to time which air emissions will occur.

The test protocol is designed to serve as guidance for conducting the soil vent/air sparge test. As with any field work, on-site conditions may require that the test protocol be adjusted. For example, if vacuum influence is not detected in the vapor monitoring probes after one (1) hour, and VOC concentrations are low, the test stage may be run for two (2) hours to examine the effects of a longer operating time on vacuum influence. On the other hand, if vacuum influence is detected rapidly and VOC concentrations are high, the test stage may be discontinued at less than one (1) hour duration. These in-field changes will be performed in a manner to maintain compliance with air discharge requirements.

In order to reduce VOC emissions during the test, Groundwater Technology has added vapor treatment of the extracted soil vapor using activated carbon. Four (4) 55 gallon drums of activated carbon will be used to treat the extracted soil vapor prior to discharge. Each drum contains 150 lbs of activated carbon for a total of 600 lbs. The activated carbon has the capability of adsorbing 60 lbs. of hydrocarbons, assuming carbon adsorption capacity of 10%.

Also, as you requested, Groundwater Technology has attempted to estimate volatile organic compound (VOC) emissions during the test. In order to estimate VOC discharge, Groundwater Technology has calculated discharge rates for several VOC concentrations. The calculations are provided as Attachment II.

Mr. Richard E. Lewis July 10, 1992 Page 2

As shown, with vapor treatment, the soil vent system may operate at over 20,000  $\mu$ g/L VOC influent concentration @ 100 CFM while meeting effluent limits. From past investigations at the Martins Ferry facility, the maximum concentration of VOC's measured in the soil gas was 812  $\mu$ g/L during the soil gas survey performed in August 1991. Through examining the soil and groundwater data collected in previous investigations and expected test operating conditions, Groundwater Technology believes that the test may be performed within discharge limits set by the state.

Groundwater Technology's protocol for monitoring air discharge from the soil vent test is to use a field monitoring instrument such as a flame ionization detector (FID). The field monitoring instrument is used to obtain an immediate reading of hydrocarbon discharge. Air bag samples are typically collected to analytically confirm field readings. Some discrepancies typically occur between laboratory and field results. In order to account for these discrepancies, a safety factor of 2 is typically used to correlate field measurements to laboratory results. In order to ensure compliance to the discharge limits, an operating curve (Attachment III) was prepared. The operating curve shows the limits which the system may be operated in compliance with discharge limits. This curve is based on 24 hours of operation. Actual discharge is obtained by multiplying by the actual discharge time. All operating points below the curve are within compliance.

If at any time during the test Groundwater Technology personnel believe the operating parameters may exceed discharge limits, appropriate steps will be taken to ensure compliance. These steps may include, but are not limited to: gauge back VOC discharge, reduce applied vacuum or shorten test operations. Please do not hesitate to contact Tim Havranek or me at (412) 776-4700 if you should have any questions or comments regarding the test procedure.

Sincerely,

GROUNDWATER-TECHNOLOGY, INC.

Matthew R. Brunner

Engineer

MRB:cjf

Enclosure: Attachment I

Test Protocol

Attachment II

**VOC Discharge Estimate** 

Attachment III -

**Operating Curve** 

cc:

D. Dunkis, Wheeling-Pittsburgh Steel

L. Boroski, Wheeling-Pittsburgh Steel

T. Havranek, Groundwater Technology, Inc.

OC File

#348:lewis7.10



## ATTACHMENT I

## WHEELING-PITTSBURGH STEEL CORPORATION AIR SPARGE TEST/SOIL VENT TEST AIR DISCHARGE

#### TEST PROTOCOL

Throughout the test, VOC concentrations will be monitored with a flame ionization detector (FID). Field VOC measurements will be extrapolated using the graph provided in Attachment III. Adjustments to the system or test termination may be implemented if emissions appear to exceed limits.

The protocol for the soil vent/air sparge test to be performed at the Martins Ferry Ohio Plant is presented below:

- Task 1 Install sparge point and monitoring probes. A vertical profile of adsorbed-phase constituents will be determined by measuring VOC concentrations in headspace with a FID. Screened interval will be set at depth of highest adsorbed-phase concentrations.
- Task 2 Background VOC concentrations will be measured in all monitoring probes using a FID.
- Task 3 Soil vent test will be initiated using test flow rates projected at ≈ 15, 45 and 75 CFM. The soil vent test will be run at each flow rate for one hour. At each flow rate, monitoring probes will be monitored for vacuum increase and VOC concentrations. An air bag sample of the influent and effluent air will be collected for laboratory analysis during the 75 CFM flow rate to document compliance to state emissions limits.
- Task 4 Air sparge test will be initiated using test injection rates projected at 5, 10 and 20 CFM at ~ psi. The air sparge test will be run at each injection rate for one hour. At each flow rate, monitoring probes will be monitored for pressure increase and VOC concentrations. No air emissions will occur during the air sparge test.
- Task 5 The final part of the test includes combined operation of the soil vent and air sparge test systems. Three scenarios will be tested: Low vent/high sparge; high vent/low sparge; and high vent/high sparge. As before, vacuum/pressure readings and VOC concentrations will be measured during each test scenario. Each scenario will be run for one hour. An air bag sample of the influent and effluent air will be collected for laboratory analysis during the high vent/high sparge scenario to document compliance to state emission limits.



## ATTACHMENT II

Û,



# WHEELING PITTSBURGH STEEL CORPORATION MARTINS FERRY OHIO FACILITY

# AIR SPARGE/SOIL VAPOR EXTRACTION TEST VOC MASS REMOVAL RATE ESTIMATES

#### **ASSUMPTIONS:**

- AIR FLOW RATE = 100 SCFM
- **■** 6 HOURS OF AIR DISCHARGE
- **AIR TREATED WITH 600 LBS. ACTIVATED CARBON**
- **■** CARBON ADSORPTION CAPACITY = 10%
- CARBON VOC REMOVAL EFFICIENCY = 99%

#### **VOC MASS REMOVAL ESTIMATES:**

INFLUENT VOC CONCENTRATION (µg/L)	VOC REMOVAL RATE (LB/DAY)	VOC DISCHARGE RATE (LB/DAY)	TOTAL MASS VOC'S REMOVED (LBS)	TOTAL MASS ACTIVATED CARBON REQUIRED (LBS)
1,000	8.8	0.09	2.2	22
5,000	44.0	0.44	11.0	110
10,000	88.0	0.88	22.0	220
20,000	176.0	1.76	44.0	440

#### **SAMPLE CALCULATION:**

VOC REMOVAL RATE 1,000 μg/L 100 SCFM (ft³/min)



WHEELING PITTSBURGH STEEL CORPORATION MARTINS FERRY OHIO FACILITY

AIR SPARGE/SOIL VAPOR EXTRACTION TEST VOC MASS REMOVAL RATE ESTIMATES

**VOC DISCHARGE RATE** 

99% CARBON REMOVAL EFFICIENCY

8.8/bs 99 0.09/bs day

**TOTAL MASS VOC'S REMOVED** 

**6 HOURS OPERATION** 

 $\frac{day}{24hrs} \times \frac{8.8lbs}{day} = 2.2lbs$ 

TOTAL MASS ACTIVATED CARBON REQUIRED

10% CARBON ADSORPTION EFFICIENCY

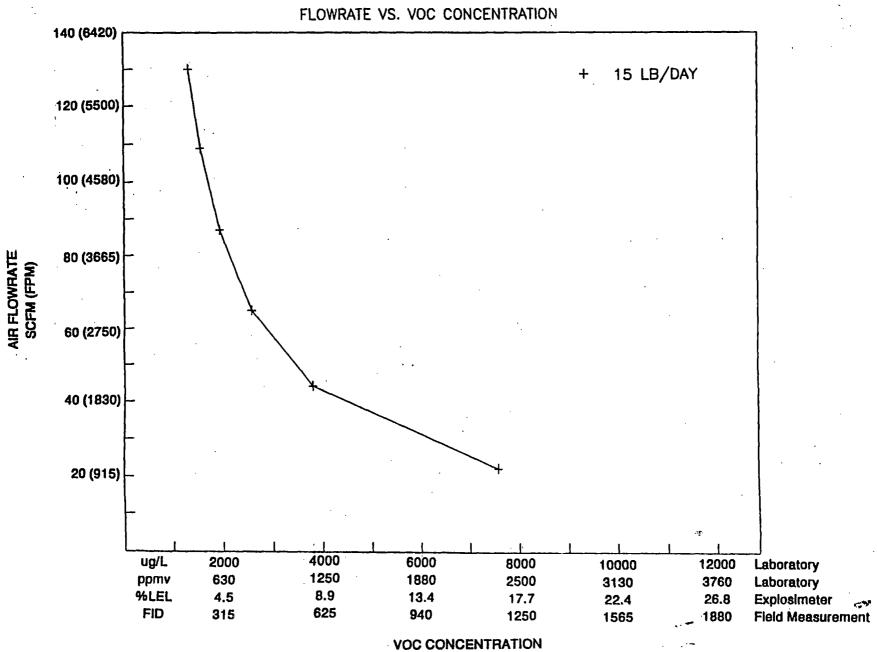
2.2lbsvoc'sX\frac{100lbscarbon}{10lbsvoc's} = 22lbscarbon

#MBA:WHEELVOC



## **ATTACHMENT III**

# WHEELING PITT STEEL - MARTINS FERRY, OH





E. C. Sambuco Director-Engineering (304) 234-2577

August 4, 1992

Ohio EPA 1800 Watermark Drive P. O. Box 1049 Columbus, Ohio 43266-0149

Attention: Ms. Misty Parsons

Re: Wheeling-Pittsburgh Steel Corporation

Martins Ferry Plant Martins Ferry, Ohio

UST Confirmed Release Site

Incident # 0702394-00

#### Dear Misty:

In a letter dated 4-28-92 Wheeling-Pittsburgh Steel Corporation had submitted a request for a Permit to Install Exemption to conduct a test study for remediation of a contaminated Underground Storage Tank site.

You indicated in subsequent phone conversations that you required a figure of estimated emissions that are expected to be emitted and that if that figure is greater than 15# per day that the emissions must be controlled and reduced by 99%.

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WPSC UST Remediation-Permit request August 4, 1992 Page 2

Your prompt attention to this matter will be greatly appreciated. If you should have any questions concerning this letter, please call Mr. R. E. Lewis at (614) 859-6771.

Very truly yours,

WHEELING-PITTSBURGH STEEL CORP.

Errol C. Sambuco

Errol C. Sambuco
Director-Engineering

#### Attachments

CC: Mr. Harold Strohmeyer
NOVAA
814 Adam Street
Steubenville, Ohio 43952-2729

Mr. Joseph Jellick Division of State Fire Marshal BUSTR 7510 East Main Street P.O. Box 525 Reynoldsburg, Ohio 43068-3395

bcc: R. Vogel

L. Boroski

W. Pysh

W. Hursen

R. Lewis

TJW/MFile



RICHARD E. LEWIS

Environmental Coordinator (304) 234-2578

January 23, 1992

General Accounting
Ohio EPA
P. O. Box 1049
Columbus, Ohio 43266-0149

Re:

Martins Ferry Plant

Permit to Install Fee

Gentlemen:

Please find enclosed Wheeling-Pittsburgh Steel's Check No. 151457, in the amount of \$200.00, to cover the Permit to Install fee for the Martins Ferry Plant for Activated Carbon Filters and Oil/Water Separator for the Emergency Groundwater Remediation Project.

If you have any questions, please give us a call.

Sincerely,

WHEELING-PITTSBURGH STEEL CORPORATION

Richard E. Lewis

**Environmental Control Department** 

REL/cr Enclosures

bcc:

T##/MFile





1134 MARKET ST. WHEELING, WEST VIRGINIA 26003

SC 3026 REV. 7	-82			STEEL CORPORATION				VOUCHER AND CHECK NUMBER
STAPLING AREA	1/20/	REQUEST 92	DATE PAID	INVOICE NUMBER		PRIORITY	CODE 1	37859
PAYABLE TO	Treas	urer of	State ofOhi	.0			ВА	NK
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DUE DA	TE			DESCRIPTION				AMOUNT
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VENDOR NU	JMBER		· · · · · · · · · · · · · · · · · · ·					·
		PLEASE :	RETURN CHEC	K TO C. A. RIN	IDERER W9A			

THE ENCLOSED CHECK IS IN SETTLEMENT OF THE ITEMS DETAILED HEREON. NO RECEIPT IS REQUIRED, UNLESS REQUESTED, BUT IF THIS PAYMENT SHOULD BE FOUND INCORRECT, PLEASE ADVISE US AT ONCE, GIVING AS REFERENCE THE ABOVE VOUCHER AND CHECK NUMBER.

AN 32

1134 MARKET ST. WHEELING, WEST VIRGINIA 26003

SC 3026 PEV. 7-82

STEEL CORPORATION

WHEELING, WEST VIRGINIA 26003

COMPTROLLER'S DIVISION APPROVAL

	•		:			VOUCHER AND CHECK NUMBER
STAPLING AREA	1/20/	REQUEST	DATE PAID	INVOICE NUMBER	PRIORITY CODE	
PAYABLE TO	Treas	urer of S	State ofOhio		8.	ANK
ADDRESS		Box 1049 bus,Ohio	43266-0149			
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ACCOUNTS PAYABLE APPROVAL

PART 3 COMPANY FILE COPY DETACH CARBON WITH THIS COPY

### Please return this copy with your remittance

#### OHIO ENVIRONMENTAL PROTECTION AGENCY

#### Permit to Install

Application No. 06-3202

Applicant's Name: Wheeling-Pittsburgh Steel

Corporation

Permit Fee \$200.00

Address: 1134 Market Street

City: Wheeling

State: West Virginia 26003

Person to Contact: Mr. Richard E. Lewis

Telephone: (304) 234-2578

Description of Proposed Source: Activated Carbon Filters and Oil/Water Separator for Emergency Groundwater Remediation Project, Martins Ferry, Belmont County

Issuance Date: January 10, 1992

Effective Date: January 10, 1992

The above named entity is hereby granted a permit to install for the above described source pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described source of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described source of pollutants will be granted the necessary operating permits. This permit is granted subject to the following conditions attached hereto:

Ohio Environmental Protection Agency

Donald R. Schregarus

Director

P. O. Box 1049, 1800 WaterMark Dr.

Columbus, Ohio 43266-0149

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	SENDER:  • Complete items 1 and/or 2 for additional services.	I also wish to receive the	
•	Complete items 3, and 4a & b.	following services (for an extra	•
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	Attach this form to the front of the mailpiece, or on the back.	if space 1. Addressee's Address	
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:	<ul> <li>Write "Return Receipt Requested" on the mailpiece below the art</li> <li>The Return Receipt Fee will provide you the signature of the pers</li> </ul>	ticle number. 2. Restricted Delivery	:
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	6. Signature (Agent)	]	
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## UNITED STATES POSTAL SERVICE

Official Business





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R. E. Lewis W9A
1134 Market ST.
Wheeling, WV 26003

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# CUSTOMIZED CONFIGURATIONS

Standard Quantek units are offered in two basic configurations: the OPL series, with plates in horizontal position, and the VPS series, with both vertical and horizontal plate packs.

#### **OPL SERIES**

The horizontal configuration found in the OPL series separator is suitable for influent oil concentrations less than 5% by volume (although higher concentrations can be handled for short periods) and solids less than 200 ppm. This configuration will reduce the oil content of the effluent to the lowest possible level.

#### **VPS SERIES**

A VPS series separator is used when a high-solid (up to 1000 ppm) and/or high-oil loading is present.

Plate packs are available in vertical configuration where solids are in excess of 200 ppm, and horizontal configuration for maximum oil removal. For many applications, a combination of vertical and horizontal are recommended.

### SPECIFICATIONS ON VPS AND OPL SERIES SEPARATORS

MATERIALS OF CONSTRUCTION: 1/4" Thk. A-36 Carbon Steel

FLANGES: ANSI 150#RF-S0 A-105 Carbon Steel

#### PLATE PACKS:

Corrugated Polypropylene with Stainless Steel Hardware

STD. EXTERIOR FINISH: Sandblast per SSPC-SP-6-63 followed by a Zinc Chromate Primer Epoxy 2 to 3 Mils. D.F.T.



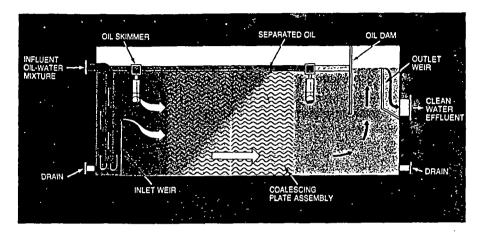
# Enhanced Gravity

The Quantek CPS is an enhanced gravity separator. It utilizes the differences in specific gravity between two or three different, immiscible components of a liquid stream for separation. Its unique patented plate construction and plate material, together with the close spacing of the plates, serves to multiply its efficiency in comparison with other gravity based devices.

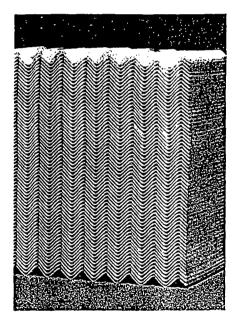
Since there are no filter cartridges or disposable filter elements involved. its operating costs approach zero. (A fast, easy, once-a-year cleaning of the plate packs with hot water is the only maintenance requirement under normal operating conditions.) At the same time, CPS efficiency far exceeds that of settling tank or tilted plate separator systems. Quantek plate packs remove oil droplets 20 microns or smaller, compared to 60 microns for tilted plate separators with 3/4" spacing and 120 microns for standard API tanks. This enables Quantek to reduce effluent oil content to levels of less than 15 ppm over a wide range of influent conditions.

Operation of the system is simple. Oily water influent is introduced into an inlet chamber by gravity flow or pump. This chamber is separated from the plate pack section by inlet weir. Heavy solids settle out and 100% oil slugs rise immediately to the surface.

The remaining oily water mixture flows through a stack of closely spaced, corrugated polypropylene plates. Both the smaller oil droplets and fine solids are progressively separated. Downstream, a baffle or oil dam prevents the collected oil from entering the outlet weir. Drains are provided at both inlet and outlet weirs for the removal of solids. Oil skimmers are provided for the manual or automatic removal of the oil.



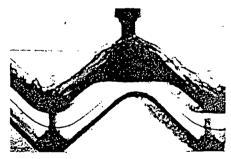
Quantek CPS systems operate at influent temperatures of 40° F to 160° F and over a pH range of 2 to 12. They require no chemicals or absorbents, no filter cartridges and have no moving parts.



## Laminar Flow, Sinusoidal Path

Quantek's patented coalescing plate separator utilizes a horizontal arrangement of closely spaced corrugated plates to induce a sinusoidal laminar flow pattern in an oily water mixture. Under laminar flow conditions, bouyancy forces cause oil droplets to rise until they attach themselves to the oleophilic (oil attractive) plates. These droplets are then coalesced into "sheets" of oil on the underside surfaces of the polypropylene plates. In using closely spaced corrugated plates, a large area of coalescing surface is provided on which small droplets can be coalesced into larger ones. This sinusoidal flow path also promotes a high incidence of droplet collision as the fluid flow constantly changes direction from a downward path to a vertical path.

The coalesced oil rises in the form of large globules through the plate weep holes to the surface of the separator.



# Predictable Performance

Like all gravity separators, the Quantek CPS depends on Stoke's law for its performance prediction. This physical law governing the rise and fall rate of a droplet or particle in a fluid stream is expressed as follows:

Stoke's law is used to compute the rise velocity of an oil droplet at 68° F:

$$V_{R} @ 68^{\circ}F = \frac{g}{18\mu(\int w - \int 0)}$$
 $D^{2}$ , where

VR = rising velocity of the oil droplet in cm/sec.

g = gravity constant (980 cm/sec²)

 $\mu = \text{viscosity of water in poises}$ (about 0.01)

∫w and

> fo = densities (gm/cm³) or specific gravities of water and oil

D = diameter of the oil droplet in cm.

With conversion factors included,  $V_R$  in inches/minute = .001286  $(1 - \int_0^2) D^2$ , where

fo = specific gravity of the oil or its density in gm/cm³, and

D = micron diameter of the oil droplet

#### **CALCULATION EXAMPLE**

At 68° F, calculate Rise Velocity for 60 micron droplets of S.G. 0.9.  $V_n$  (68° F) = .001286 (1.0 – 0.9) (60²) = 0.46 in./min.

It can also be seen for a given set of conditions, Rise Velocity  $(V_R) \propto D^2$ , where D is the diameter of the oil droplet in microns.

Therefore, a 60 micron droplet will rise 9 times faster than a 20 micron droplet.

There is another very important factor. If a mixture contains a distribution of droplet sizes dispersed throughout the continuous phase, each droplet will, in accordance with Stoke's law, rise toward the surface at a rate depending on its own diameter.

It is probable that a larger droplet, one of 100 micron size, rising to the surface at a high rate of speed will collide with smaller, slower droplets. These would combine to form even larger droplets with an even higher rate of rise. The statistical chances of such a collison depend on the droplet size distribution and the quantity of droplets in the mixture.

Quantek has a proprietary computer modeling program which utilizes Stoke's law, droplet size distribution and other relevant formulae to produce an accurate forecast of the CPS system under consideration. Design data must include:

FLOW RATE
TEMPERATURE RANGE

TYPE OF OIL AND S.G.

INFLUENT OIL LEVELS— NORMAL AND MAXIMUM IN PPM

TYPE OF WATER (E.G. FRESH, SALT) AND PRESENCE AND IDENTITY OF SURFACTANTS

NATURE OF SOLIDS TYPE AND S.G.

GRAVITY OR PUMPED FLOW (MAKE, TYPE AND RATING OF PUMP)

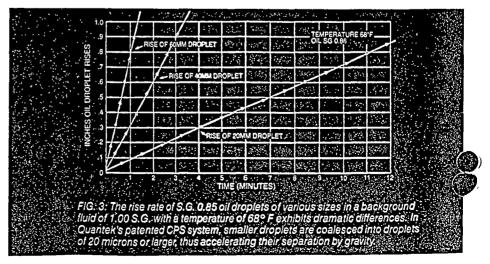
**EFFLUENT REQUIREMENTS** 

TYPE OF APPLICATION

PHYSICAL SIZE LIMITATIONS OF INSTALLATIONS

DROPLET RISE/FALL TIME (1986)						
TRAVE	L TIME FOR 3" DIS	ST. AT 68°F (HR:MI	N:SEC)			
DIRT (SETTLING TIME)	DROPLET DIAMETER		IL TIME)			
S.G. 2.0	MICRONS	S.G. 85	S.G. 90			
0:00:02 0:00:06 0:00:09 0:00:17 0:00:39 0:00:56 0:01:27 0:02:35 0:05:49 0:10:20 0:23:15 1:33:01 38:45:35	300 150 125 90 60 50 40 30 20 15 10	0:00:12 0:00:42 0:01:00 0:01:54 0:04:12 0:06:18 0:09:36 0:17:24 0:38:46 1:08:54 2:35:02 10:02:09 258:23:53	0:00:15 0:01:03 0:01:27 0:02:54 0:06:36 0:09:18 0:14:24 0:25:48 0:58:08 1:43:22 3:52:33 15:30:14 387:35:49			

FIG. 2: In accordance with Stoke's law, a 20 micron droplet with S.G. of 0.85 contained in a fluid with an S.G. of 1.00 at 68° F will rise 3 vertical inches in 38 minutes, 46 seconds. A solid particle with S.G. of 2.00 will fall 3 vertical inches in the same fluid at the same temperature in 5 minutes, 49 seconds.









# CUSTOMIZED CONFIGURATIONS

Standard Quantek units are offered in two basic configurations: the OPL series, with plates in horizontal position, and the VPS series, with both vertical and horizontal plate packs.

#### **OPL SERIES**

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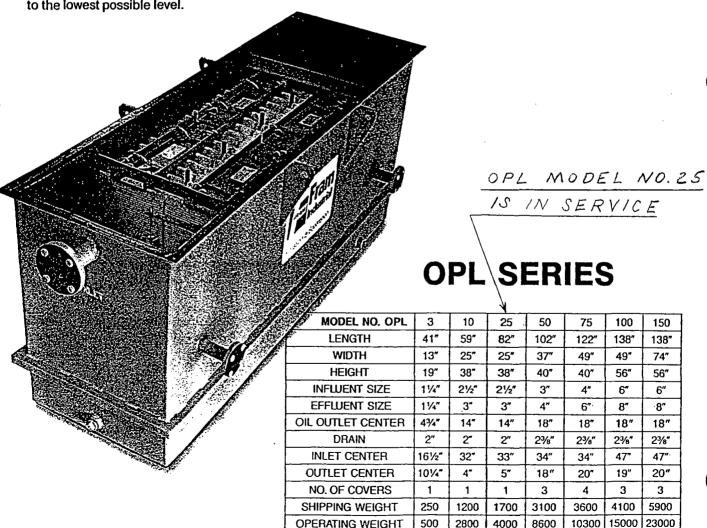
ANSI 150#RF-S0 A-105 Carbon Steel

#### PLATE PACKS:

Corrugated Polypropylene with Stainless Steel Hardware

STD. EXTERIOR FINISH:

Sandblast per SSPC-SP-6-63 followed by a Zinc Chromate Primer Epoxy 2 to 3 Mils. D.F.T.



OIL OUTLET SIZE

11/2"

11/2"

11/2"

2"

3"

4"

# Predictable Performance

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$$V_{R} @ 68^{\circ}F = \frac{g}{18\mu(\int w - \int o)}$$
 $D^{2}$ , where

V<sub>R</sub> = rising velocity of the oil droplet in cm/sec.

g = gravity constant (980 cm/sec²)

μ = viscosity of water in poises(about 0.01)

∫w and

> fo = densities (gm/cm³) or specific gravities of water and oil

D = diameter of the oil droplet in cm.

With conversion factors included,  $V_R$  in inches/minute = .001286  $(1 - \int 0) D^2$ , where

fo = specific gravity of the oil or its density in gm/cm³, and

D = micron diameter of the oil droplet

#### **CALCULATION EXAMPLE**

At 68° F, calculate Rise Velocity for 60 micron droplets of S.G. 0.9.  $V_R$  (68° F) = .001286 (1.0 – 0.9) (60²) = 0.46 in./min.

It can also be seen for a given set of conditions, Rise Velocity ( $V_R$ )  $\propto D^2$ , where D is the diameter of the oil droplet in microns.

Therefore, a 60 micron droplet will rise 9 times faster than a 20 micron droplet.

There is another very important factor. If a mixture contains a distribution of droplet sizes dispersed throughout the continuous phase, each droplet will, in accordance with Stoke's law, rise toward the surface at a rate depending on its own diameter.

It is probable that a larger droplet, one of 100 micron size, rising to the surface at a high rate of speed will collide with smaller, slower droplets. These would combine to form even larger droplets with an even higher rate of rise. The statistical chances of such a collison depend on the droplet size distribution and the quantity of droplets in the mixture.

Quantek has a proprietary computer modeling program which utilizes Stoke's law, droplet size distribution and other relevant formulae to produce an accurate forecast of the CPS system under consideration. Design data must include:

FLOW RATE
TEMPERATURE RANGE

TYPE OF OIL AND S.G.

INFLUENT OIL LEVELS— NORMAL AND MAXIMUM IN PPM

TYPE OF WATER (E.G. FRESH, SALT) AND PRESENCE AND IDENTITY OF SURFACTANTS

NATURE OF SOLIDS TYPE AND S.G.

GRAVITY OR PUMPED FLOW (MAKE, TYPE AND RATING OF PUMP)

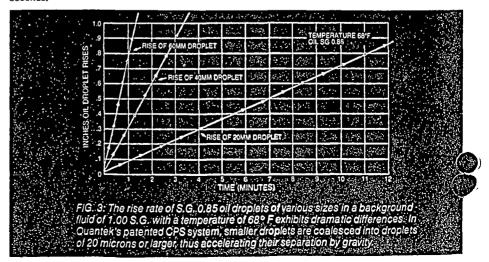
**EFFLUENT REQUIREMENTS** 

TYPE OF APPLICATION

PHYSICAL SIZE LIMITATIONS OF INSTALLATIONS

DROPLET, RISE/FALL TIME						
TRAVEL TIME FOR 3" DIST. AT 68°F (HR:MIN:SEC)						
DIRT (SETTLING TIME)	DROPLET DIAMETER	, -	IL TIME)			
S.G. 2.0	MICRONS	S.G. 85	S.G. 90			
0:00:02 0:00:06 0:00:09 0:00:39 0:00:56 0:01:27 0:02:35 0:05:49 0:10:20 0:23:15 1:33:01 38:45:35	300 150 125 90 60 50 40 30 20 15 10	0:00:12 0:00:42 0:01:00 0:01:54 0:04:12 0:06:18 0:09:36 0:17:24 0:38:46 1:08:54 2:35:02 10:02:09 258:23:53	0:00:15 0:01:03 0:01:27 0:02:54 0:06:36 0:09:18 0:14:24 0:25:48 0:58:08 1:43:22 3:52:33 15:30:14 387:35:49			

FIG. 2: In accordance with Stoke's law, a 20 micron droplet with S.G. of 0.85 contained in a fluid with an S.G. of 1.00 at 68° F will rise 3 vertical inches in 38 minutes, 46 seconds. A solid particle with S.G. of 2.00 will fall 3 vertical inches in the same fluid at the same temperature in 5 minutes, 49 seconds



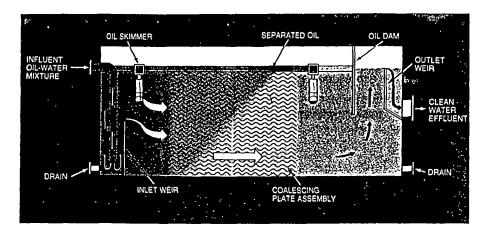
# Enhanced Gravity

The Quantek CPS is an enhanced gravity separator. It utilizes the differences in specific gravity between two or three different, immiscible components of a liquid stream for separation. Its unique patented plate construction and plate material, together with the close spacing of the plates, serves to multiply its efficiency in comparison with other gravity based devices.

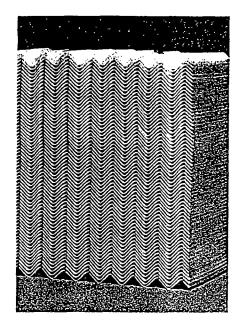
Since there are no filter cartridges or disposable filter elements involved, its operating costs approach zero. (A fast, easy, once-a-year cleaning of the plate packs with hot water is the only maintenance requirement under normal operating conditions.) At the same time, CPS efficiency far exceeds that of settling tank or tilted plate separator systems. Quantek plate packs remove oil droplets 20 microns or smaller, compared to 60 microns for tilted plate separators with 3/4" spacing and 120 microns for standard API tanks. This enables Quantek to reduce effluent oil content to levels of less than 15 ppm over a wide range of influent conditions.

Operation of the system is simple. Oily water influent is introduced into an inlet chamber by gravity flow or pump. This chamber is separated from the plate pack section by inlet weir. Heavy solids settle out and 100% oil slugs rise immediately to the surface.

The remaining oily water mixture flows through a stack of closely spaced, corrugated polypropylene plates. Both the smaller oil droplets and fine solids are progressively separated. Downstream, a baffle or oil dam prevents the collected oil from entering the outlet weir. Drains are provided at both inlet and outlet weirs for the removal of solids. Oil skimmers are provided for the manual or automatic removal of the oil.



Quantek CPS systems operate at influent temperatures of 40° F to 160° F and over a pH range of 2 to 12. They require no chemicals or absorbents, no filter cartridges and have no moving parts.

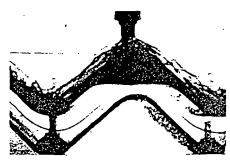


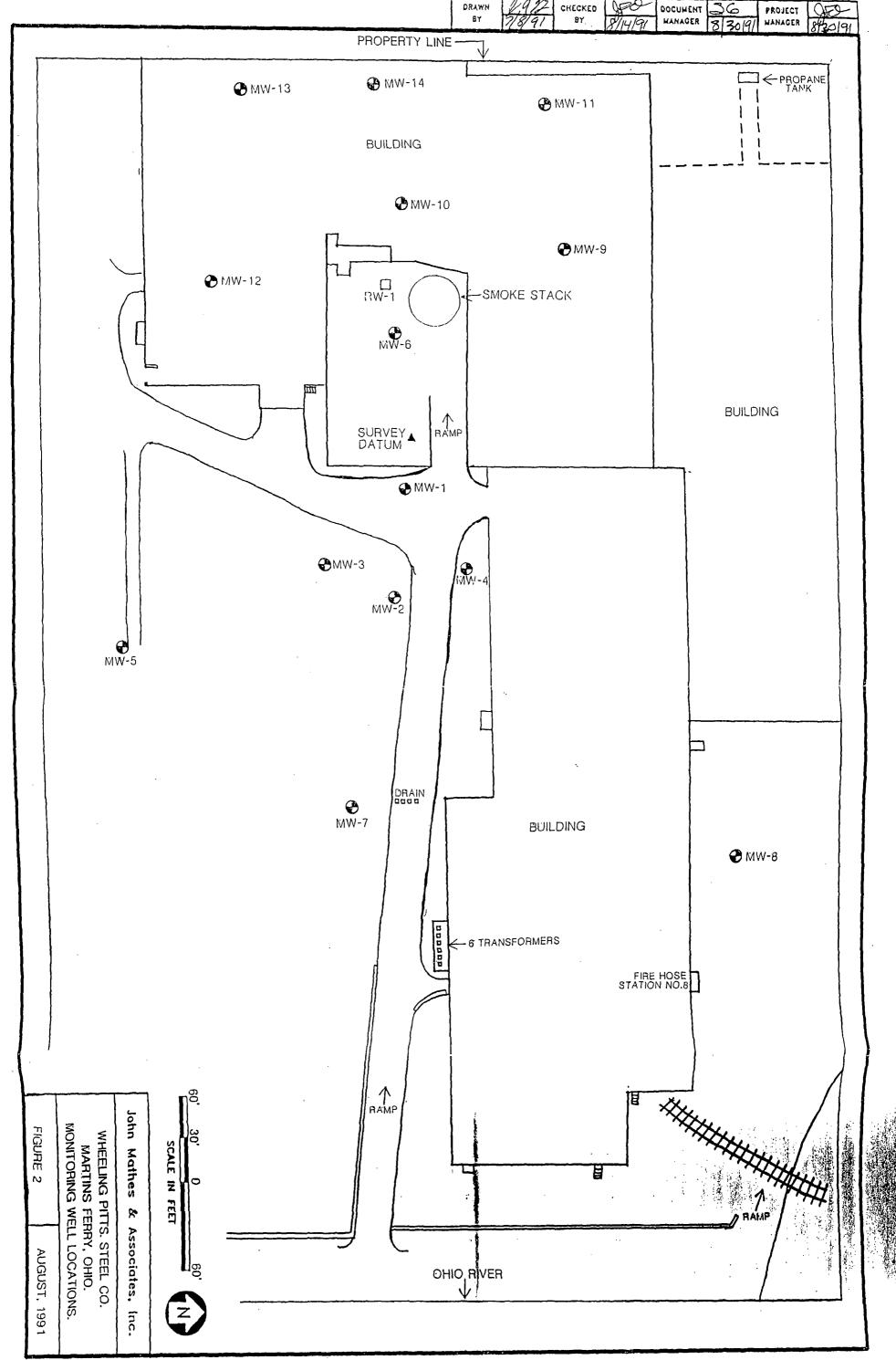
## Laminar Flow, Sinusoidal Path

Quantek's patented coalescing plate separator utilizes a horizontal arrangement of closely spaced corrugated plates to induce a sinusoidal laminar flow pattern in an oily water mixture.

Under laminar flow conditions, bouyancy forces cause oil droplets to rise until they attach themselves to the oleophilic (oil attractive) plates. These droplets are then coalesced into "sheets" of oil on the underside surfaces of the polypropylene plates. In using closely spaced corrugated plates, a large area of coalescing surface is provided on which small droplets can be coalesced into larger ones. This sinusoidal flow path also promotes a high incidence of droplet collision as the fluid flow constantly changes direction from a downward path to a vertical path.

The coalesced oil rises in the form of large globules through the plate weep holes to the surface of the separator.







STEEL CORPORATION

December 12, 1991

Ohio Department of Commerce Division of State Fire Marshal Bureau of Underground Storage Tank Regulations 7510 East Main Street P. O. Box 525 Reynoldsburg, Ohio 43068-3395

Attention: Mr. Joseph Jellick

Re: Martins Ferry Plant 1001 Main Street

Martins Ferry, Ohio 43935

Incident #0702394-00

#### Gentlemen:

John Mathes & Associates, Inc. is the company that has been hired to do the product recovery of the gasoline from the groundwater at the Martins Ferry Plant of Wheeling-Pittsburgh Steel Corporation.

Enclosed is a Product Recovery Report from John Mathes & Associates for November, 1991. Also find enclosed a letter from John Mathes & Associates explaining a change in equipment layout, an equipment malfunction causing an overflow, and measures taken to prevent a reoccurrence. The John Mathes letter includes a cover letter from Wheeling-Pitt to the Ohio EPA-Southeast District. The dike has been constructed.

If you should have any questions concerning this letter, please call us at 304-234-2578.

Very truly yours,

WHEELING-PITTSBURGH STEEL CORP.

Richard E. Lewis

Environmental Coordinator

Attachments

Page 2 Mr. Richard Lewis November 26, 1991

The system was reactivated on November 22, 1991, and continues to operate. The system will be monitored on a weekly basis by Mathes personnel.

We trust these measures will provide the necessary security for the system and prevent any future releases. If you have any questions, please contact me.

Very truly yours,

JOHN MATHES & ASSOCIATES, INC.

John F. O'Neill

Manager Field Services

JFO/dld/979C56

cc: Larry Boroski



### John Mathes & Associates, Inc.

A Burlington Environmental Inc. Company

East Park One Building 701 Rodi Road Suite 101 Pittsburgh, PA 15235-4559 412/824-0200



December 11, 1991 Project 423229

Mr. Richard Lewis Wheeling-Pittsburgh Steel 1134 Market Street Wheeling, West Virginia 26003

Dear Mr. Lewis:

## Subject: Fifth Monthly Product Removal Report Martins Ferry, Ohio

John Mathes & Associates, Inc., (Mathes) is pleased to submit the fifth 30-day product recovery report for Wheeling-Pittsburgh Steel Company's (Wheeling-Pittsburgh) plant in Martins Ferry, Ohio. Mathes implemented a product recovery system at the plant on June 19, 1991. The system was installed as an emergency interim measure to recover floating product, i.e., gasoline released from a leaking underground storage tank.

During the fifth month, November, a product release of approximately 30 gallons occurred from the system. The details of the release are documented in a letter dated November 26, 1991. Measures have been taken to prevent any future releases.

A change to the water handling and discharge part of the system has been made. Previously, water effluent from the oil/water separator flowed to a sump and was then pumped through the carbon filters. Because of the transfer pump breakdown, the transfer pump was replaced with a gravity flow system. The oil/water separator has been elevated on a stand with the effluent outlet approximately 5 feet above the ground allowing the water to flow by gravity through the carbon filters.

As requested by Wheeling-Pittsburgh, groundwater from well RW-1 continues to be pumped and treated. However, as we reported in our letter of October 31, 1991, the intended objective of pumping the well is to drawdown the water table and induce product to flow into the well at greater rate. This objective cannot be achieved with the current system because the aquifer yield is too great to produce any significant drawdown, even at the maximum pumping rate of 10 gallons per minute. Mathes understands, however, that Wheeling-Pittsburgh is planning to contract with another company to initiate groundwater remediation.

Page 2 Mr. Richard Lewis December 11, 1991

Groundwater from RW-1 is pumped directly into the oil/water separator; however, phase separation of the two liquids has not been achieved because of the high water-to-product ratio.

A product skimmer pump has been placed in well RW-1 to remove floating product. The skimmer pump in well MW-10 has been transferred to well MW-1 because the product thickness is greater in MW-1. Discharge from each of the skimmer pumps goes directly into a storage tank. Product is being removed at a rate of approximately 8 ounces/hour or 1 gallon every 16 hours.

Product thickness and groundwater elevations were measured on November 26, 1991. These data are shown on the enclosed Tables 1 and 2, respectively. Measurable product was discovered in well MW-4 for the first time. The well is located approximately 30 feet north of the tank excavation.

Product flow rates in the current system are very low and good phase separation has not been achieved because of the small volume of product. Mathes recommends that an alternative recovery system be implemented as soon as possible. Vapor extraction or large volume groundwater pumping and treatment are potential alternatives to the current recovery method.

If you have any questions concerning this report, please contact me at (412) 824-0200.

Very truly yours,

JOHN MATHES & ASSOCIATES, INC.

Manager Field Services

Jøhn R.

O'Neill'

JFO/dld/994C56

Enclosures

Table 1
PRODUCT THICKNESS (FEET)

## WHEELING-PITTSBURGH STEEL COMPANY MARTINS FERRY, OHIO

Well No.	06/24/91	07/12/91	07/18/91	08/02/91	08/14/91	09/09/91	10/30/91	11/26/91
MW-1	0.33	0.55	0.46	0.14	0.10	0.45	0.25	0.21
MW-4								0.23
MW-6	0.05	0.07	0.05	0.02	0.02	0.06	0.07	0.04
MW-9	0.01	0	0	0	0	0	0	0
MW-10	0.89	1.14	1.32	0.84	0.60	0.23	0.92	0.04
RW-1	1.30	0.91	0.75	0.63	0.45	0.83	NA	0.03

NA - Not available.

Table 2 GROUNDWATER ELEVATIONS

## WHEELING-PITTSBURGH STEEL COMPANY MARTINS FERRY, OHIO

Well No.	06/24/91	07/12/91	07/18/91	08/02/91	08/14/91	10/30/91	11/26/91
MW-1	71.06	71.85	71.38	71.16	71.19	70.69	71.05
MW-2	75.33	73.77	75.45	75.15	75.15	74.95	75.31
MW-3	74.68	73.11	74.91	74.62	74.47	74.00	73.96
MW-4	73.82	72.38	73.89	73.32	73.36	72.91	73.51
MW-5	75.30	73.29	75.52	75.25	75.25	74.95	75.21
MW-6	58.86	57.45	59.39	59.33	59.27	58.81	58.53
MW-7	75.01	74.65	75.55	73.62	74.55	71.75	75.34
MW~8	69.21	71.03	71.81	68.59	74.24	67.34	69.55
MW-9	55.55	55.97	55.64	55.88	56.38	56.84	57.09
MW-10	55.15	55.27	54.91	55.48	56.14	56.60	56.36
MW-11	55.70	56.18	55.88	56.05	56.42	57.10	57.22
MW-12	57.16	57.32	57.22	57.03	57.42	57.63	NA
MW-13	56.79	57.23	56.72	56.72	57.17	57.69	57.62
MW-14	56.04	56.57	56.09	56.34	56.81	57.47	57.36
RW-1	54.80	55.47	55.28	55.62	56.20	NM	57.36

Note: Groundwater deviations are with reference to an arbitrary site datum point of 100.00 feet.

NA - Not available, access to well was blocked.

NM - Not measured.



December 12, 1991

Ohio Environmental Protection Agency Southeast District Office 2195 Front Street Logan, Ohio 43138-0931

Attention: Mr. Steve Lind

Dear Mr. Lind:

This letter is a confirmation of a telephone report made to your office on 11-19-91 regarding a situation at the UST remediation site at the Martins Ferry Plant of Wheeling-Pittsburgh Steel Corporation.

The tank storing recovered gasoline from the remediation site was found to be overflowing. The product recovery system malfunctioned causing water to fill and overflow the gasoline storage tank. The dike did not hold the liquid and the liquid flowed onto the ground.

Enclosed is a letter from John Mathes and Associates explaining what happened and measures taken to prevent a reoccurence. The secondary containment has been constructed around the tank.

If you should have any questions concerning this letter, please call us at 304-234-2578.

Very truly yours,

e The section was to

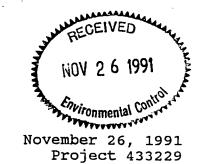
WHEELING-PITTSBURGH STEEL CORP. سعد. د سیسسسسداران د

Richard E. Lewis Environmental Coordinator



### John Mathes & Associates, Inc.

A Burlington Environmental Inc. Company



East Park One Building 701 Rodi Road Suite 101 Pittsburgh, PA 15235-4559 412/824-0200

Mr. Richard Lewis Wheeling-Pittsburgh Steel Company 1134 Market Street Wheeling, West Virginia 26003

## Subject: Recovery System, Product Release Martins Ferry, Ohio

A product release of approximately 30 gallons of gasoline from the John Mathes & Associates, Inc., (Mathes) recovery system occurred between Friday, November 15, 1991, and Sunday, November 17, 1991. The product was released from a recovery storage tank at the site. Prior to the release, a system change The change consisted of replacing a had been implemented. transfer pump between the oil/water separator and the carbon filters with a gravity flow system. After a few days of operation with the gravity flow system, a vapor lock developed in As a result, water backed up in the the carbon filters. separator and flowed into the skimmer intakes and into the product storage tank. The storage tank subsequently filled to the top, overflowed and breeched the secondary containment The release was discovered by Wheeling-Pittsburgh personnel on Monday November 18, 1991, and the recovery system was shut-down at that time.

The following measures have been implemented to prevent any future releases:

- The transfer pipes from the separator to the carbon filters were replaced with larger diameter pipes to reduce head loss. Two air vents were also installed on the carbon filters to prevent air locks in the filters.
- A high level shut-down switch has been installed in the storage tank that will automatically interrupt the air supply to the recovery pumps in the event the tank is filled.
- A larger, more secure secondary confinement area will be constructed around the storage tank.



CERTIFIED MAIL
P 506 650 587

December 12, 1991

Ohio Environmental Protection Agency Southeast District Office 2195 Front Street Logan, Ohio 43138-0931

Attention: Mr. Ken Early
Permits Section

Re: Wheeling-Pittsburgh Steel Corporation Martins Ferry Plant G. W. Remediation Project PTI No. 06-3202

Dear Mr. Early:

Your letter dated 9-9-91 requests more information concerning the Application for A Permit to Install equipment to treat groundwater at the Martins Ferry Plant. The additional information concerning the site and equipment is submitted as follows:

- 1. The recovery system was installed as an emergency interim action for the purpose of removing floating product and not groundwater. While the system is capable of handling small volumes (up to 10 gallons per minute) of groundwater coincident with product recovery, it is not intended to be a groundwater recovery system. Therefore, the total volume of contaminated groundwater to be treated has not been estimated. The maximum daily flow rate for the carbon filters is 14,400 gallons per day or 10 gallons per minute. The actual daily flow rate is 10,080 gallons per day or 7 gallons per minute. Wheeling-Pittsburgh Steel is presently getting information concerning other methods of remediation. If another remediation method is to be initiated, a new application for Permit to Install and Operate will be submitted. It is not known how much gasoline leaked from the storage tank. Fourteen groundwater monitoring wells and one recovery well were installed during the site assessment. A drawing of the well locations is attached.
- The State Fire Marshal's office was notified when floating product was discovered in a monitoring well.

WPSC-MARTINS FERRY PLANT UST REMEDIATION PROJECT December 12, 1991 Page 2

The State Fire Marshal's office then directed Wheeling-Pittsburgh Steel Corporation to begin removing the floating product as soon as possible. The existing recovery system was then installed by John Mathes and Associates. A periodic product recovery report is submitted to the State Fire Marshal's office. Attached is the first report dated 8-9-91 which explains the action taken and equipment installed. The latest product removal report dated 12-12-91 is also attached, which includes an explanation of a change in the system layout. No other corrective action plans have been developed to date.

- 3. The specifications for the oil-water separator are attached.
- 4. The Discharge monitoring reports submitted for this location indicate that the effluent limitations can be met except for a period in October when the carbon filters were spent and required changing. The filters were changed in November and have been changed again in December.
- Please refer to paragraph 1 and 3 for design, size, 5. flow, etc. A representative from John Mathes and Associates visits the site once each week to check operations and make necessary repairs and changes. Wheeling-Pittsburgh Steel Corporation personnel check the system daily. The carbon has been replaced twice since the unit was installed. Wheeling-Pittsburgh Steel Corporation personnel take samples of the water effluent from the unit weekly. Every two weeks a sample is taken from the water flowing between the two carbon filters. The purpose of this is to find out when the first filter is failing so that a filter change may be made prior to the second filter failing and effluent water exceeding the effluent limitations. An Operation and Maintenance manual for the recovery system has not been developed. The unit is leased from John Mathes and Associates and will be returned to John Mathes when its services are no longer needed.

WPSC-MARTINS FERRY PLANT UST REMEDIATION PROJECT December 12, 1991 Page 3

If you should have any questions concerning this letter, please call us at 304-234-2578.

Very truly yours,

WHEELING-PITTSBURGH STEEL CORP.

Richard E. Lewis Environmental Coordinator

Attachments

CC: R. Vogel
L. Boroski

TOTAL TOTAL UST Mfile

SC 1802 REV 9-89

## INTEROFFICE CORRESPONDENCE

Date: October 2, 1991

From: R. E. Lewis

To: W. R. Samples

T. J. Waligura

R. E. Vogel

L. R. Boroski

D. G. Dunkis

Re: Martins Ferry Plant

Remediation at contaminated UST site

On 10-1-91, John O'Neill from John Mathes & Associates phoned and stated that he recommends that the product recovery system at the Martins Ferry Plant be shut down and removed because it is not effective in removing product from the groundwater.

I told him not to shut the system down until we give the approval to do so. This decision will have to be discussed with BUSTR prior to shutting down the system.

I asked him what he recommended to be installed after this system is removed. He indicated that either a Pump and Treat System or a Vapor Extraction system should be installed.

On the same day a conversation was held with L. Boroski and D. Dunkis concerning getting recommendations and price quotes from consulting companies concerning the next phase of this project. Mr. Dunkis will request this information.

On 10-2-91, I phoned BUSTR and talked to Joe Jellick about the situation. I informed him that we intended to secure recommendations and quotes from consulting companies and asked if the present system can be shut down. He was asking questions about well measurements, pumps, etc. so I phoned John O'Neill and held a three party conference conversation. O'Neill told him that the pump was cycling about once every two minutes, that the maximum pumping rate is 10 gallons per minute, that depth did not affect pump performance, that the pump was not causing any significant draw-down of the groundwater, and that on 10-1-91, there was no product in the recovery well and about 1" of product in the MW-10 monitoring well.

Mr. Jellick asked how it was intended to remove the remaining free product if the present system was removed. Mr. O'Neill stated that the contaminated groundwater must be treated and if a Pump and Treat system or Vapor Extraction system were installed, it would treat the contaminated groundwater and eventually remove the remaining free product, also.

MARTINS FERRY PLANT UST REMEDIATION SITE October 2, 1991 Page 2

Mr. Jellick stated that product on groundwater is unpredictable and can come and go in the wells depending on the situation. He said that the present system can be shut down and removed, but an interim system must be installed to collect product in any well that has free product until a remediation system is decided upon and installed (Manual bailing is not an acceptable interim system).

During the conversation, Mr. O'Neill asked Mr. Jellick about the lead in the groundwater. I stated that the lead readings were in the Phase II Site Assessment report and that I had not sent a copy to Mr. Jellick. Mr. Jellick asked that I send him a copy of the report.

On 7-29-91, an Application for Permit to Install a gasoline recovery system was sent to the Ohio EPA. On 9-9-91, Ohio EPA sent a letter to WPSC requesting that a revised application be submitted to include the additional information requested in their letter. Since it appears that the present recovery system will not be in operation very long and that it will most likely be replaced with another system that will require a permit to operate, no action will be taken on the immediate request other than notifying the EPA of the situation. The Ohio EPA letter is attached.

cc:=USTFile



State of Ohio Environmental Protection Agency

Southeast District Office 2195 Front Street Logan, Ohio 43138-9031 (614) 385-8501 FAX (614) 385-6490



George V. Voinovich Governor

September 9, 1991

RE:

WHEELING PITTSBURGH STEEL CORP., MARTINS FERRY PLANT G. W. REMEDIATION PROJECT PTI NO. 06-3202

Mr. Richard E. Stoll Executive Vice President Manufacturing Wheeling-Pittsburgh Steel Corp. 1134 Market Street Wheeling, WV 26003

Dear Mr. Stoll:

On August 9, 1991, our office received an Application for Permit to Install for installation of equipment to treat ground water to be pumped and discharged. The ground water was contaminated by a leaking underground gasoline storage tank located at the Wheeling Pittsburgh Steel, Martins Ferry plant. We have reviewed the application, and we have the following comments and/or concerns.

- 1. The application does not indicate the following: the amount (total volume) of contaminated ground water to be treated; the volume of gasoline leaked from the storage tank; the extent of the ground water contamination (how many affected wells, etc.); and the design daily flow rate of the carbon filters or the actual and/or expected daily flow rate the treatment system will handle. Please revise the application by submitting this information to our office.
- 2. We understand that the State Fire Marshall's office requires the development of a Corrective Action Plan for remediation of ground water contaminated by underground storage tanks. Please submit one copy of the completed Corrective Action Plan to our office.
- 3. The specifications for the oil-water separator and storage tank were not included with the application. Please revise the application by submitting two copies of the specifications for these units.
- 4. The facility was recently issued a final NPDES permit that included authorization to discharge the treated ground water from this discharge. Can the proposed treatment system meet the effluent limitations specified in the permit?

Mr. Richard E. Stoll September 9, 1991 Page 2

5. Please explain the basis for the design of the system, e.g. size of units, flow rates, etc. Please also explain in detail how the system will be operated and maintained, e.g. when will carbon be replaced, routine testing, etc. A copy of the O & M Manual for the system would be helpful.

Please revise the Application for Permit to Install No. 06-3202 in accordance with our comments and submit the revisions to our office as soon as possible.

If you have questions, please feel free to contact me at my office.

Sincerely,

Ken Early

District Engineer

Permits Section, DWPC

KE/jw

cc: Tom Botroff

WPS Corp.

1134 Market Street Wheeling, WV 26003

cc: Richard E. Lewis

WPS Corp.

1134 Market Street Wheeling, WV 26003



State of Ohio Environmental Protection Agency

Southeast District Office

2195 Front Street Logan, Ohio 43138-9031 (614) 385-8501 FAX (614) 385-6490



George V. Voinovich Governor

September 9, 1991

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Mr. Richard E. Stoll September 9, 1991 Page 2

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Please revise the Application for Permit to Install No. 06-3202 in accordance with our comments and submit the revisions to our office as soon as possible.

If you have questions, please feel free to contact me at my office.

Sincerely,

Ken Early

District Engineer

Permits Section, DWPC

KE/jw

cc: Tom Botroff

WPS Corp.

1134 Market Street Wheeling, WV 26003

cc: (RichardyEnglewis.)

WPS Corp.

1134 Market Street Wheeling, WV 26003



CERTIFIED MAIL

RETURN RECEIPT REQUESTED P110 285 617

August 9, 1991

Ohio Department of Commerce Division of State Fire Marshal Bureau of Underground Storage Tank Regulations 7510 East Main Street P. O. Box 525 Reynoldsburg, Ohio 43068-3395

Attention: Mr. Joseph Jellick

Re: Martins Ferry Plant 1001 Main Street

Martins Ferry, Ohio 43935 Incident =0702394-00

#### Gentlemen:

John Mathes & Associates, Inc. is the company that has been hired to do the product recovery of the gasoline from the groundwater at the Martins Ferry Plant of Wheeling-Pittsburgh Steel Corporation.

Enclosed is a Product Recovery Report from John Mathes & Associates for the period beginning 6-19-91 and ending 8-5-91.

If you should have any questions concerning this letter, please call us at 304-234-2578.

Very truly yours,

WHEELING-PITTSBURGH STEEL CORP.

Richard E. Lewis
Environmental Coordinator

#### Attachment

bcc: R. Vogel

L. Boroski

TJW/WRS/JMM/UST MFile



### John Mathes & Associates, Inc.

A Burlington Environmental Inc. Company



East Park One Building 701 Rooi Road Suite 101 Pittsburgn. PA 15235-4559 412/824-0200

August 6, 1991 Project 423229

Mr. Dick Lewis Wheeling-Pittsburgh Steel Company 1134 Market Street Wheeling, West Virginia 26003

Dear Mr. Lewis:

Subject: 30-Day Product Recovery Report

June 19, 1991 to August 5, 1991

Martins Ferry, Ohio, Plant

John Mathes & Associates, Inc., (Mathes) implemented its Portable Alternative Remedial Technology Systems (PARTS) at Wheeling-Pittsburgh Steel Company's (Wheeling-Pittsburgh) Martins Ferry, Ohio, plant on June 19, 1991, to recover gasoline that leaked from a former underground storage tank (UST) at the site.

Fourteen monitoring wells and one recovery well have been installed at the site. Product has been measured in five of these wells. Product thicknesses are shown on Table 1.

A 4-inch diameter recovery well was installed to contain the spread of the contaminant plume and recover the leaked gasoline. A submersible water table depression pump was placed in the recovery well and is currently pumping at a rate of 5 gallons per minute. To date, the PARTS recovery system has removed approximately 400 gallons of gasoline.

A stainless-steel petroleum product recovery pump has been placed within the product layer in the recovery well to remove the gasoline. A product recovery pump has also been placed within one of the 2-inch monitoring wells (MW-10). All pumps are pneumatically operated. Water extracted by the submersible pump and gasoline extracted by the product pumps are discharged into an oil/water separator. Gasoline is removed from the separator through adjustable skimming outlets and discharged to a holding tank.

Water from the oil/water separator is being discharged to an existing plant outfall. Effluent from the separator is pumped through two 55-gallon activated carbon canisters to remove benzene, toluene, ethylbenzene and xylenes (BETX). The expected

Page 2 Mr. Dick Lewis August 6, 1991

effluent water quality is 5 micrograms per liter (ug/L) or less of benzene. The recovered gasoline has not been removed from the site. Arrangements are currently being made with a waste fuel recycler to remove the product from the site when storage capacity is reached. Current storage capacity is 1,500 gallons.

Product recovery at the Martins Ferry site will continue until such time that the product thickness is reduced to a point where it is not feasible to recover it with this system. Recovery progress and any changes to the system will be reported in subsequent 30-day reports.

If there are any questions concerning the project, please contact me.

Very truly yours,

JOHN MATHES & ASSOCIATES, INC.

John F. O'Neill

Manager, Field Services

JFO/dld/664C75

Enclosure

Table 1
PRODUCT THICKNESS (FEET)

## WHEELING-PITTSBURGH STEEL MARTINS FERRY, OHIO

		199	91	
Well No.	June 24	July 12	July 18	August 2
MW-1	0.33	0.55	0.46	0.13
MW-6	0.05	0.07	0.05	0.02
MW-9	0.01	0	0	0
MW-10	0.89	1.14	1.32	0.84
RW-1	1.30	0.91	0.75	0.63

RW-1 - Recovery well.

United States Postal Service

Official Business



PENALTY FOR PRIVATE USE, \$300

Print your name, address and ZIP Code here Wheeling-Pittsburgh Steel Corp. R. E. Lewis W9A 1134 Market St. Wheeling, WV 26003

SENDER:  • Complete items 1 and/or 2 for additional service		Liplos voich va grandin A
Complete items: 3: and 4a & 6		I also wish to receive the following services (for an extra
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<ul> <li>Attach this form to the front of the mailpiece, of back if space does not permit.</li> </ul>		Addressee's Address
<ul> <li>Write "Return Receipt Requested" on the mailning</li> </ul>	ece next to	2.   Restricted Delivery
the article number.		Consult postmaster for fee.
3. Article Addressed to:	4a. Art	icle Number
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Southerst District Office	7.5	vice Type
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Logan, Ohio 43/38	- 1.24 · · · · · · · · · · · · · · · · · · ·	ess Mail
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5. Signature (Addřessee)	8. Addr	essee's Address (Only if requested
	and f	ee is paid)
6. Signature (Agent)	7	
1 A LORDIA A		
S Form 3811, October 1990 U.S. GPO: 1990-27	\$5.428.430 p.	MESTIC RETURN RECEIPT

## 770 582 P7P

RECEIP FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Certified Fee 100 Special Delivery Fee Restricted Delivery Fee Return Receipt showing to whom and Date Delivered 00 Return Receipt showing to whom, Date, and Address of Delivery TOTAL Postage and Fees Postmark or Date 8/7/9/ PS Form 3800,

## STICK POSTAGE STAMPS TO ARTICLE TO COVER FIRST CLASS POSTAGE, CERTIFIED MAIL FEE, AND CHARGES FOR ANY SELECTED OPTIONAL SERVICES. (SOO front)

- If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving
  the receipt attached and present the article at a post office service window or hand it to your rural carrier.
  (no extra charge)
- 2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach and retain the receipt, and mail the article.
- 3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to back of article. Endorse front of article RETURN RECEIPT REQUESTED adjacent to the number.
- 4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse RESTRICTED DELIVERY on the front of the article.
- 5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.
- 6. Save this receipt and present it if you make inquiry.

¥ U.S.G.P.O. 1988-217-132

## UNITED STATES POSTAL SERVICE OFFICIAL BUSINESS

- Print your name, address and ZIP Code in the space below.

  Complete items 1, 2, 3, and 4 on the reverse.

  Attach to front of article if space permits, otherwise affix to back of article.
- erticle.
  Endorse article "Return Receipt Requested" adjacent to number.





PENALTY FOR PRIVATE USE, \$300

RETURN

Print Sender's name, address, and ZIP Code in the space below.

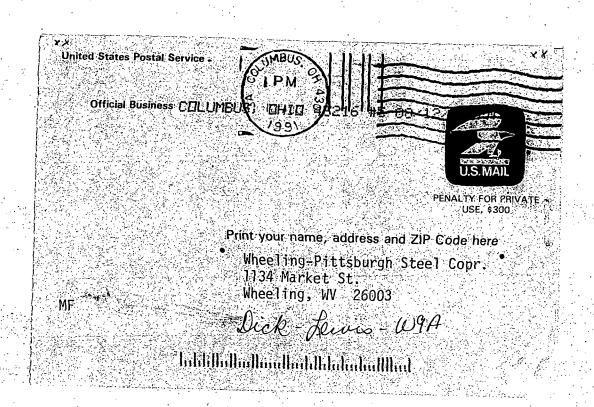
Wheeling-Pittsburgh Steel Corp. R. E. Lewis W9A

1134 Market St.

Wheeling, WV 26003

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SENDER: Complete items 1 and 2 when additional s  3 and 4.  Put your address in the "RETURN TO'" Space on the reverse s from being returned to you. The return receipt fee will provide s the date of delivery. For additional fees the following services and check box(es) for additional service(s) requested.  1.  Show to whom delivered, date, and addressee's add  (Extra charge)	ide. Failure to do this will prevent this vou the name of the person delivered to and are available. Consult postmaster for fees
3. Article Addressed to: Ohio Dept. of Commerce Div. of State Fire Marshal Bureau of Underground Storage Tank 7510 East Main St. P. 0. Box 525 Reynoldsburg, Ohio. 43068-3395	4. Article Number  P 423 793 179  Type of Service:  Registered Insured  Cod Return Receipt for Merchandise  Always obtain signature of addressee or agent and DATE DELIVERED
5. Signature — Addressee  X 6. Signature Agent X 7. Date of Delivery  2-27-9	8. Addressee's Address (ONLY if requested and fee paid)  DOMESTIC RETURN RECEIPT



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Complete items 3 and 4a & h	following convices Harren and
Print your name and address on the reverse of that we can return this card to you.	상태에 하나가는 사람이에 살아가면 나는 사람들이 가지 않는데 나는 것이 나왔다면서 지점이 되었다.
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ureau of UST Regulations	Registered Insured
510 East Main St.	☐ Certified ☐ COD
0. Box 525	Express Mail Return Receipt for
eynoldsvung, Ohio 43068	7. Date of Delivery.
3 T- 1919 T- 1910 T- 1	2-11-91
Signature (Addressee)	<u>હું તેઓનું ભાગમાં જોઈએ કે કે પ્રોથમિક એ છે પિલ્</u> યાનું કે, મુખ્યાનું તેને પૂર્વ કે કે સુંસ્થાને તેને પ્રાપ્ય કે મ
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# RECEIPT FOR CERTIFIED MAIL NO INSURANCE COVERAGE PROVIDED NOT FOR INTERNATIONAL MAIL

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## STICK POSTAGE STAMPS TO ARTICLE TO COVER FIRST CLASS POSTAGE, CERTIFIED MAIL FEE, AND CHARGES FOR ANY SELECTED OPTIONAL SERVICES. (See front)

- 1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached and present the article at a post office service window or hand it to your rural carrier. (no extra charge)
- 2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach and retain the receipt, and mail the article.
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- 4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse **RESTRICTED DELIVERY** on the front of the article.
- 5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.
- 6. Save this receipt and present it if you make inquiry.

& U.S.G.P.O. 1989-234-555

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RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse) Of Connerce P.O., State and ZIP Code Postage 52 Certified Fee 00 Special Delivery Fee Restricted Delivery Fee Return Receipt showing to whom and Date Delivered Return Receipt showing to whom, Date, and Address of Delivery TOTAL Postage and Fees s 25.2 Postmark or Date 8/9/9/8

PS Form 3800,

# STICK POSTAGE STAMPS TO ARTICLE TO COVER FIRST CLASS POSTAGE. CERTIFIED MAIL FEE, AND CHARGES FOR ANY SELECTED OPTIONAL SERVICES. (see front)

- If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached and present the article at a post office service window or hand it to your rural carrier.
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- 5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.
- 6. Save this receipt and present it if you make inquiry.

\* U.S.G.P.O. 1988-217-132

1134 MARKET ST. WHEELING, WEST VIRGINIA 26003

SC 3026 REV. 7-82

STEEL CORPORATION DATE OF REQUEST DATE PAID INVOICE NUMBER STAPLING PRIORITY CODE AREA 7/17/91 BANK Treasurer, Stat of Ohio PAYABLE TO P. O. Box 1049 Columbus, Ohio 43266 ADDRESS DUE DATE DESCRIPTION AMOUNT Application fee for Bermit to Install Recovery System for groundwater clean-up at Martins Ferry Plant. \$135.00 7/18/91 VENDOR NUMBER PLEASE RETURN CHECK TO C. A. RINDERER W9A EXPLANATION FOR OUR FILE ONLY

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ACCOUNTS PAYABLE APPROVAL

COMPTROLLER'S DIVISION APPROVAL

PART 3 COMPANY FILE COPY DETACH CARBON WITH THIS COPY

1134 MARKET ST. WHEELING, WEST VIRGINIA 26003

COMPTROLLER'S DIVISION APPROVAL

SC 3026 REV. 7-82

STEEL CORPORATION DATE OF REQUEST DATE PAID INVOICE NUMBER STAPLING PRIORITY CODE 7/17/91 AREA BANK Treasurer, Stat of Ohio PAYABLE TO P. O. Box 1049 Columbus, Ohio 43266 **ADDRESS** DUE DATE DESCRIPTION AMOUNT Application fee for Bermit to Install Recovery System for groundwater clean-up at Martins Ferry Plant. \$135.00 7/18/91 VENDOR NUMBER PLEASE RETURN CHECK TO C. A. RINDERER W9A VOUCHER DISTRIBUTION EXPLANATION FOR OUR FILE ONLY ACCOUNT CODES AMOUNT LOC. GEN. LEDGER 03k 354 SUB. DET. SPEC. DEBIT 070 877 \$135.00 CREDIT

ACCOUNTS PAYABLE APPROVAL

PART 3 COMPANY FILE COPY DETACH CARBON WITH THIS COPY STEEL CORPORATION

July 29, 1991

Ohio EPA Southeast District Office 2195 Front Street Logan, Ohio 43138-9031

Attention: Ken Early

Permits Section

### Gentlemen:

Please find enclosed an application for a permit to install equipment to be used for remediation of groundwater contaminated with gasoline at the Martins Ferry Plant of Wheeling-Pittsburgh Steel Corporation.

Also enclosed is Check No. 113851 dated 7-22-91 for \$135.00 to cover cost of application fee.

If you should have any questions concerning this letter, please call us at 304-234-2578.

Very truly yours,

WHEELING-PITTSBURGH STEEL CORP.

Richard E. Lewis

Environmental Coordinator

#### Attachments

bcc: R. Vogel

L. Boroski

T. Bottorf JAMUURS/MFile

#### GENERAL INSTRUCTIONS

A Permit to Install is required for new or modified sources of pollution under the provisions of OAC Rule 3745-31. An application cannot be considered complete unless all applicable questions are answered and the required information has been submitted. This application must be signed in accordance with OAC Rule 3745-31-04 or it cannot be accepted. In accordance with OAC 3745-31-02, an application for a permit to install a disposal systems [as defined in ORC 6111.01(G)] shall include plans for the disposal system, and issuance of a PTI shall constitute approval of plans per ORC 6111.44 and 6111.45.

Revised Code 3745.11(G) requires an application fee of \$15.00. Revised Code 3745.11(C) requires a plan review fee of \$100.00 plus 0.2% of the estimated construction cost of the project must be submitted in the form of a check made payable to the "Treasurer of the State of Ohio". The total maximum fee is \$5015.00. The application and plan review fees are non-refundable and due at the time of application. Applicants for permits involving disposal systems will be required to pay a permit to install fee as required by Section 3745.11(C) of the Ohio Revised Code. This fee is payable fifteen days after the date of final issuance of the permit.

Before any review of plans can be initiated, all applicable fees, required forms (completely filled out - indicate N/A where appropriate), and letters must be received by the appropriate District Office. The submittal package must contain: I. The appropriate fees (Item 11, page 4).

- II. Two copies of pages 1, 2 and 3 of the permit to install application (Ohio EPA form
- III. Detailed plans (Item 9a, page 2).
- IV. Data sheets (Item 9b, page 2, if appropriate).
- V. Special submittals (Item 9c, page 3, 1f appropriate).
- VI. Detailed information (Item 13, a-m, pages 4 and 5, if appropriate).

Applications for both permits to install and plan approvals shall be signed on page 3 in accordance with OAC 3745-31-04. For any type combined PTI application, contact the district representative.

Applications for permits to install (wastewater) shall be signed on page 3:

- (1) In the case of a corporation, by a principal executive officer of at least the level of vice-president, or his duly authorized representative, if such representative is responsible for the overall operation of the facility:
- (2) In the case of a partnership, by a general partner;
- (3) In the case of sole proprietorship, by the proprietor; and
- (4) In the case of a municipal, state, federal or other governmental facility, by the principal executive officer, the ranking elected official, or other duly authorized employee.

Applications for plan approval (wastewater) for the land application of sludge, sludge management or animal waste, shall be signed on page 3 by either the president. vice-president, or highest ranking corporate officer with offices located in the state, or the owner of the entity planning to apply the sludge. In case of a publicly owned treatment plant, the application shall be signed by the highest elected official of the municipality from which the sludge is generated.

The signatures shall constitute personal affirmation that all statements or assertions of fact made in the application are true and complete, comply fully with applicable state requirements, and shall subject the signatory to liability under applicable state laws forbidding false or misleading statements.

Form 4309 (Revised 4/90)

# Application for Permit to Install or Plan Approval

Treatment Works (Includes Septic Systems)  X New Source (1)  Modification (1) and (2)  Pretreatment Only	For Office Use Only Application No. Date Received		
Sludge or Waste Management Plan Approval	PAID : Amount Date :		
Other (Sewers, Pump Stations, Fly Ash or Bottom Ash Disposal Site, etc.) (2)	! ! Check # Date ! !		
1. a) OwnerWheeling-Pittsburgh Steel Corporation			
b) Applicant (per OAC 3745-1-04, See General Instru Responsible Official Richard E. Stoll	EXCC. FICE FICE.		
Firm Wheeling-Pittsburgh Steel Corp.			
Mailing Address 1134 Market Street, Wheeling, WV	25003		
c) Name of Project/Facility Martins Ferry Plant-Gr	oundwater remediation		
Location (List street/road address, township and if possible. Otherwise provide legal description	•		
	Martins Ferry, Ohio 43935		
	, , , , , , , , , , , , , , , , , , , ,		
d) Receiving Stream or Treatment Works to Receive W	astewaters Ohio River		
e) Person to Contact (Person most familiar with the	technical aspects of the project.)		
Name Richard E. Lewis	Title_Environmental_Coordinator		
Organization Wheeling-Pittsburgh Steel Corp.	Telephone (304)_234-2578		
f) Operator of facility Wheeling-Pittsburgh Steel (	Corp.		
<ol><li>a) Reason for project: <u>To remediate groundwater (</u></li></ol>	contaminated by leaking underground		
gasoline storage tank.	· · · · · · · · · · · · · · · · · · ·		
b) Is this facility regulated under an effective NP	<u>Y N Permit #</u> DES Permit? ! X ! !!!		
c) Is this application filed in compliance with Ohio EPA Findings and Orders or a Consent Order* *If the answer is yes, fill in the effective dat	! <u>Y</u> !! <u>X</u> ! Date:		
(1) If the treatment works or modification of treatmen any type of lagoon (non-concrete lined) other than hydrogeologic site investigation report, meeting t Information, Item 13. m, page 5, must be submitted	a flow equalization lagoon, then a he requirements given in Detailed		
(2) For modifications, additions, or replacement of ex	isting works.		
Form 4309 (Revised 4/90)			

•	c) Inspection Responsibility: John Mathes and Associates, Inc.				
	d) Address: 701 Rodi Road, Pittsburgh, PA Phone: 412 ) 824-0200				
4.	Project Costs: \$\frac{10000.00}{(Amount)} \tag{X} \text{estimated} \text{bid} \tag{invoiced} \tag{Check one}				
5.	Estimated schedule a) Construction: begin $\frac{6/13/91}{6/19/91}$ complete $\frac{6/14/91}{6/19/91}$ b) Operation: start $\frac{6}{19/91}$ compliance $\frac{6}{19/91}$				
6.	<ul> <li>a) This new system has been designed for MGD average flow.</li> <li>b) This existing system has been modified for additional MGD average flow.</li> <li>c) This existing system has been modified to comply with effluent limits in Item 7.</li> </ul>				
7.	Design performance criteria (use attachment if necessary) Parameter Units 30 Day Average 7 Day Average Maximum				
	Benzene PPB 5 5 10				
	<del></del>				
0	Facility type: X newmodifyreplace				
ο.					
	a) Pretreatment(*) b) X Industrial Direct Discharger(*) c) Livestock Management Plan d) Public				
	Treatment Works(*)				
Sanitary Sewers Pump Station					
	Land Application of Sludge (Plan Approval Only)  e) Semi-Public, Private or Commercial(*)  (*) Part 9d. must be completed				
9.	Plan Submitted should include (to be attached to the application)				
	a) X Detail Plans (4 sets; consult with the appropriate District Office)  Construction Drawings Specifications Site Plan Vicinity Map				
	X Schematic diagrams b) Data Sheets (as appropriate) Sanitary Sewer Data Sheet (sanitary sewers only) Pump Station Data Sheet (pump stations) Appendix G (long or short as appropriate)				
	Wastewater Treatment Works-General Information (EPA Form 8003)				

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	noval lotton from musiciality (anathrostment alle)
	roval letter from municipality (pretreatment only) ES Application (direct discharges)
PU(	O certification (Facilities Subject to Regulation by
	Public Utilities Commission)
	1 Analysis
	oundwater Geologic Evaluation
L1\	restock Waste Management Plan tificate of Supervision for installation, and operation
	Package Sewage Treatment Plant
	ineering Report
	er:
	Maintenance Costs  e the best possible estimate of the annual operation and maintenance
cost of the r maintenance of required. Fo and maintenar	ew or modified facility. For modified facilities the operation and osts for the entire facility, not for just the modified portions are republicly owned wastewater treatment facilities include the operation ce costs of the sewer system. Provide as much detail as possible, he facility/system is operating at design flow/loading.
\$1350/month-	rental \$16200 annually
\$6000/3 mths	carbon filters 24000 annually
\$2000/month-	operation inspection = 24000 annually
	\$64,200 Total annual estimated cost.
statements or a true and comple	31-04, these signatures shall constitute personal affirmation that all ssertions of fact made in the application and attachments thereto are te, comply fully with applicable state requirements, and shall subject o liability under applicable state laws forbidding false or misleading
	Authorized Signature (of facility) * ** Date
	Exec. Vice President-Manufacturing
	Title
•	1134 Market Street, Wheeling, WV 26003
	Address
<b>5</b>	
For Wastewater Treatment Plant	s: Signature of Engineer preparing plans.* Date
,	Company
	Address
	* Photostatic copies of signatures are not acceptable.
-	** Signature of owner or responsible official of applying

1. An NPDES modified permit application will be submitted at a later date.

- a. Application Fee \$ 15.00 b. Plan Review Fee (+) \$ 120.00 (0.002 x Project costs) + \$100 (Not to Exceed \$5.000.00)
- c. Total\* (a + b) \$ 135.00 (Not to exceed \$5.015.00)
- \* Fee for Sludge Management Plan not to exceed \$115.00
- \* Fee for Waste Management Plan (check with District Office)
- 12. A permit to install issuance fee will be invoiced upon final issuance of the permit in accordance with the following schedule and due within 15 days of effective date.

Design Flow Discharge (gallons per day)	Fee
Less than 1,000	\$ 50
1,001 to 5,000	\$100
5,001 to 50,000	\$200
50,001 to 100,000	\$300
100,001 to 300,000	\$525
Over 300,000	\$750

PTI Issuance Fees payable to "Treasurer, State of Ohio," through the OEPA Central Office at the following address.

Ohio Environmental Protection Agency Division of Finance/Permit Bookkeeping 1800 Watermark Drive P.O. Box 1049 Columbus, Ohio 43266-0149

- 13. The following detailed information must be submitted on a separate piece of paper and attached to this application. Indicate "N/A" for non-applicable information.
  - a) Describe the product or service to be provided by the applicant along with a description of the proposed source/facility (i.e., the number of homes to be serviced, the number of employees, an existing electroplater subject to 40 CFR 413 Sub Part \_\_\_\_ and produces \_\_\_\_\_\_).
  - b) List the name and quantity of all materials and chemicals (solid, liquid, or gaseous) that will be used or produced by the source/facility (industrial facilities only).
  - c) State the reason for the application. Is this a new installation, modification to an existing source/facility, reconstruction of an existing source/facility, startup of a source/facility that has been permanently shut down for (state number of years), or as built plans for a facility already constructed.
  - d) Has a previous Ohio EPA PTI or plan review application or plan submission been filed for this source/facility? If so, state the date and type of the application previously submitted.
  - e) Will the proposed source/facility comply with all existing rules, laws, and regulations of Ohio EPA and U.S. EPA?

- f) State the anticipated quality (concentration and loads) of all types of pollutants to be discharged by the facility.
- g) State in detail the method for disposal for any wastewater or sludge listed in the question above. A complete description of any control system to be employed should be included.
- h) If wastewater is to be discharged to a surface water, state the anticipated concentration (mg/l) and loading (lbs/day) of pollutants in the discharge, and the effect this discharge will have on the surface water under critical conditions. List any NPDES permits or indicate if an application has been filed.
- i) If wastewater is to be discharged by injection into the groundwater, you must apply for a (UIC) underground injection control permit pursuant to OAC 3745-34. List any UIC permits or indicate if an application has been filed.
- j) If wastewater is to be discharged to a sewerage system, what will be the effect on the sewerage system and wastewater treatment system.
- k) Describe any monitoring equipment to be installed at the facility.
- 1) Will the proposed source conform with area-wide waste management plans for wastewater treatment?
- m) Hydrogeologic site investigation report required for construction or modification of any type of a lagoon other than a concrete lined lagoon or a flow equalization lagoon which shall contain as a minimum:
  - 1) Well logs and material characteristics.
  - 2) Define the uppermost aquifer.
  - 3) Definition of geology/hydrogeology, and major aquifer(s) for water supply in the area of the proposed facility.
  - 4) Definition of depth to bedrock.
  - 5) Definition of saturated zone ("High Seasonal Water Table", perched zones etc.), includes interconnections and relationships between zones and with surface dischargers (streams, springs and seeps, etc.)
  - 6) Data characterizing soil materials to be utilized in construction. (If applicable.
  - 7) Note all sources of drinking water, including wells and springs, within 1.000 feet of the limits of waste placement.

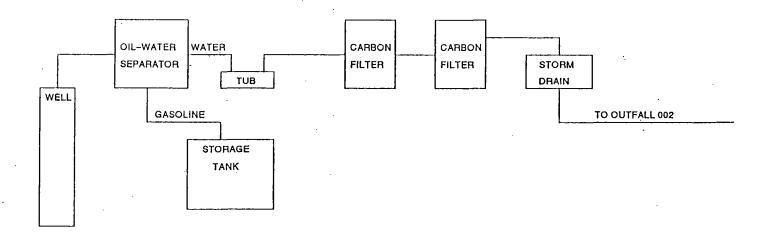
For more details contact the district representative.

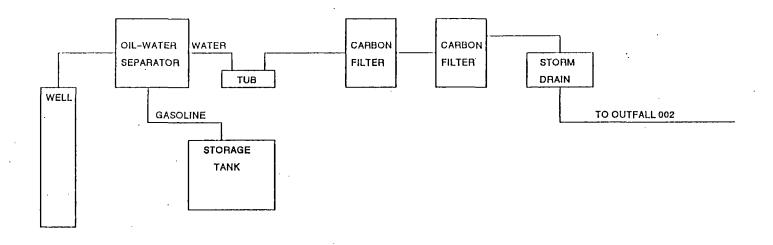
# **ANSWERS TO QUESTION 13**

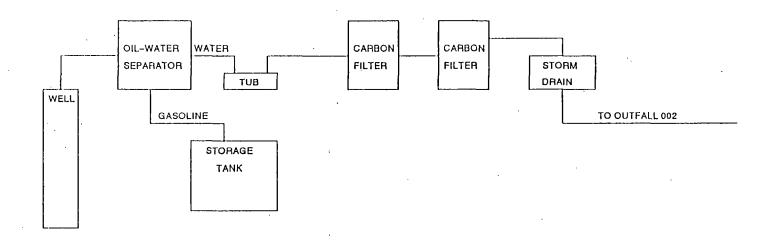
- 13. A. Groundwater is to be remediated using an oil/water separator and carbon filtration.
  - B. Granular activated carbon will be used in two carbon filtration units. It is estimated that 1600 pounds will be used annually.
  - C. This is a new installation that is needed to remediate contaminated groundwater.
  - D. NO
  - E. YES
  - F. Anticipated quality: benzene concentration = 5 ppb avg., 10 ppb max. loading = .0004 #/day avg., .0008 #/day max. with trace amounts of solids.
  - G. The contaminated water and free product will be pumped from a recovery well to an oil/water separator. The product will be collected in a storage tank and the water will be pumped through two carbon filtration units and discharged to the Ohio River. (See attached schematic diagram).
  - H. Concentration Benzene 5 ppb avg., 10 ppb max. Loading = Benzene - .0004 #/day avg., .0008 #/day max.

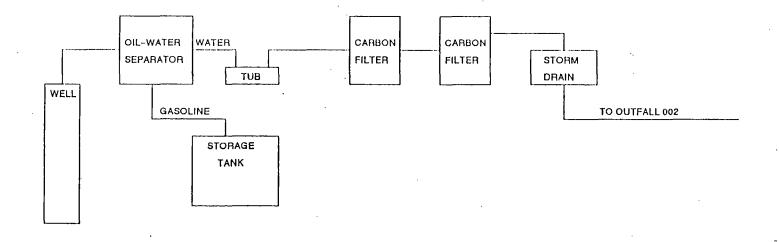
Should have no effect on surface water. NPDES application # OH0011339 has been filed for Martins Ferry Plant.

- I. N/A
- J. N/A
- K. N/A
- L. N/A
- M. N/A









SC-2403 (3-91)

WHEELING - PITTSBURGH STEEL CORPORATION

STATEMENT OF REMITTANCE

VOUCHER NUMBER	INVOICE DATE	VEN. INVOICE NO.	AMOUNT	CASH DISCOUNT	NET AMOUNT
910756094	071791	910755094	135.00	-00	135.00
					<u>-</u>
			·		
			ļ		-

IN PAYMENT OF ABOVE ITEMS

DETACH BEFORE DEPOSITING

AMOUNT OF CHECK \$

135.00

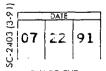
CHECK NUMBER

113851



DISBURSEMENT NUMBER 242148

STEEL CORPORATION WHEELING, WEST VIRGINIA



PAY EXACTLY \*\*\*\*\*\*135DOLLARS AND GO CENTS

PAY TO THE ORDER OF

TREASURER OF THE STATE OF OHIO PO BOX 1049 COLUMBUS OH 43266-014

A subsidiary of Citicorp One Penn's Way New Castle, DE 19720

**VOID AFTER 60 DAYS** 

MO0113851M

120311002091

38779478



State of Ohio Environmental Protection Agency

#### Southeast District Office

2195 Front Street Logan, Ohio 43138-9031 (614) 385-8501 FAX (614) 385-6490



George V. Voinovich Governor

June 10, 1991

RE:

WHEELING PITTSBURGH STEEL CORP.
MARTINS FERRY PLANT
BELMONT COUNTY
G.W. REMEDIATION

Mr. Richard Lewis 1134 Market Street Wheeling, WV 26003

Dear Mr. Lewis:

During recent telephone conversations, we discussed Ohio EPA requirements for remediation of groundwater contaminated with gasoline from a 1,000 gallon underground storage tank. In response to our telephone conversation, I offer the following comments and/or information.

- 1. Ohio EPA Policy 1.21 requires approval by the Director of the Ohio EPA of disposal plans for the discharge of liquids, resulting from petroleum underground storage tanks. This is in accordance with the Ohio Revised Code 6111.45. Therefore, an application for Permit to Install (PTI) must be submitted to this office to obtain approval for the installation of a system to treat petroleum contaminated groundwater. I have enclosed an Application for Permit to Install. Please complete it and submit it to our office within 30 days of initiating the groundwater clean up. Note: Initially, you should work with the State Fire Marshall's office to begin emergency cleanup and evaluation of the contaminated groundwater.
- 2. Best Available Treatment technology must be used for treatment of wastewater/contaminated groundwater from underground storage tanks. Best Available Treatment technology, as defined by Ohio EPA; consists of an oil/water separator, followed by carbon columns or equivalent (air stripper), designed to remove petroleum contaminants (Benzene, toluene, xylene etc.) to below detection limits.
- 3. An NPDES Permit Application must be submitted to our office for the discharge of treated wastewater from the proposed system. I have enclosed NPDES Permit Application forms 1 and 2d. Note: Wheeling Pittsburgh Steel Martins Ferry Plant has already submitted a renewal NPDES Application form 1 and 2C. Therefore no fees (\$15.00) are required for submittal of the application. Please complete and properly sign the enclosed NPDES Permit application forms and submit them to our office, with a cover letter stating; they are being submitted to amend the previous application.



Mr. Richard Lewis June 10, 1991 Page 2

4. The <u>treated</u> wastewater can be discharged to a public owned treatment works (POTW), instead of discharging to surface waters. If you decide to discharge to a POTW, written authorization must be obtained from the POTW's authority representative (Plant Superintendent, Mayor, etc.). If you would like more information about discharging to a POTW, please contact Dave O'Toole, Pretreatment Coordinator, of our office.

When submitting the Application for Permit to Install, please be sure to submit all the information required by question no. 9a and the information requested by question 9c, applicable to the project.

If you have questions please contact me at my office.

Sincerely,

Ken Early

District Engineer

Permits Section, DWPC

KE/bjs

Enclosure

cc: Dr. William Samples (encl.)
Wheeling-Pittsburgh Steel Corp.
1134 Market Street
Wheeling, WV 26003

cc: Tom Bottorf
Wheeling-Pittsburgh Steel Corp.
1134 Market Street
Wheeling, WV 26003

cc: Joe Jellick State Fire Marshall's Office 8895 East Main Street Reynoldsburg, OH 43068

# Ohio EPA Division of Water Pollution Control PERMIT TO INSTALL OR PLAN APPROVAL APPLICATION. **GENERAL INSTRUCTIONS**

A Permit to Install is required for new or modified sources of pollution under the provisions of OAC Rule 3745-31. An application cannot be considered complete unless all applicable questions are answered and the required information has been submitted. This application must be signed in accordance with OAC Rule 3745-31-04 or it cannot be accepted. In accordance with OAC 3745-31-02, an application for a permit to install a disposal systems [as defined in ORC 6111.01(G)] shall include plans for the disposal system, and issuance of a PTI shall constitute approval of plans per ORC 6111.44 and 6111.45.

Revised Code 3745.11(G) requires an application fee of \$15.00. Revised Code 3745.11(C) requires a plan review fee of \$100.00 plus 0.2% of the estimated construction cost of the project must be submitted in the form of a check made payable to the "Treasurer of the State of Ohio". The total maximum fee is \$5015.00. The application and plan review fees are non-refundable and due at the time of application. Applicants for permits involving disposal systems will be required to pay a permit to install fee as required by Section 3745.11(C) of the Ohio Revised Code. This fee is payable fifteen days after the date of final issuance of the permit.

Before any review of plans can be initiated, all applicable fees, required forms (completely filled out - indicate N/A where appropriate), and letters must be received by the appropriate District Office. The submittal package must contain: I. The appropriate fees (Item 11, page 4).

- II. Two copies of pages 1, 2 and 3 of the permit to install application (Ohio EPA form 4309).
- III. Detailed plans (Item 9a. page 2).
- IV. Data sheets (Item 9b, page 2, if appropriate).
  - V. Special submittals (Item 9c, page 3, if appropriate).
- VI. Detailed information (Item 13, a-m, pages 4 and 5, if appropriate).

Applications for both permits to install and plan approvals shall be signed on page 3 in accordance with OAC 3745-31-04. For any type combined PTI application, contact the district representative.

Applications for permits to install (wastewater) shall be signed on page 3:

- (1) In the case of a corporation, by a principal executive officer of at least the level of vice-president, or his duly authorized representative, if such representative is responsible for the overall operation of the facility:
- (2) In the case of a partnership, by a general partner;
- (3) In the case of sole proprietorship, by the proprietor; and
- (4) In the case of a municipal, state, federal or other governmental facility, by the principal executive officer, the ranking elected official, or other duly authorized emplovee.

Applications for plan approval (wastewater) for the land application of sludge, sludge management or animal waste, shall be signed on page 3 by either the president, vice-president, or highest ranking corporate officer with offices located in the state, or the owner of the entity planning to apply the sludge. In case of a publicly owned treatment plant, the application shall be signed by the highest elected official of the municipality from which the sludge is generated.

The signatures shall constitute personal affirmation that all statements or assertions of fact made in the application are true and complete, comply fully with applicable state requirements, and shall subject the signatory to liability under applicable state laws forbidding false or misleading statements.

Form 4309 (Revised 4/90)

# OHIO ENVIRONMENTAL PROTECTION AGENCY Division of Water Pollution Control Application for Permit to Install or Plan Approval

Treatment Works (Includes Septic Systems) New Source (1) Modification (1) and (2) Pretreatment Only	! For Office Use Only ! ! Application No. ! ! Date Received !	
Sludge or Waste Management Plan Approval	PAID !!	
Other (Sewers, Pump Stations, Fly Ash or Bottom Ash Disposal Site, etc.) (2)	! Check # Date!	
1. a) Owner		
b) Applicant (per OAC 3745-1-04, See General Instru	uctions).	
Responsible Official	Title	
F1rm	Telephone ( )	
Mailing Address		
c) Name of Project/Facility		
Location (List street/road address, township and	county, or latitude and longitude	
if possible. Otherwise provide legal description	on)	
d) Receiving Stream or Treatment Works to Receive W	Mastewaters	
e) Person to Contact (Person most familiar with the	e technical aspects of the project.)	
Name	Title	
Organization		
f) Operator of facility		
2. a) Reason for project:		
b) Is this facility regulated under an effective NPDES Permit? !!!!		
c) Is this application filed in compliance with Ohio EPA Findings and Orders or a Consent Order* *If the answer is yes, fill in the effective dat	Y N Date:	
	e of the finding and orders.	
(1) If the treatment works or modification of treatmen any type of lagoon (non-concrete lined) other than hydrogeologic site investigation report, meeting t Information, Item 13. m, page 5, must be submitted	it works involves the construction of a flow equalization lagoon, then a the requirements given in Detailed	
hydrogeologic site investigation report, meeting t	t works involves the construction of a flow equalization lagoon, then a he requirements given in Detailed with this application.	

ა.	. a) besigned by:	· · · · · · · · · · · · · · · · · · ·
	b). Address:	Phone:_( )
•	c) Inspection Responsibility:	
	d) Address:	
4.	. Project Costs: \$ (estimate	ed
5.	Estimated schedule a) Construction: begin b) Operation: start	complete
6.	<ul> <li>a) This new system has been designed for</li> <li>b) This existing system has been modified for addit</li> <li>c) This existing system has been modified to comply</li> </ul>	tional MGD average flow.
7.	Design performance criteria (use attachment if nece Parameter Units 30 Day Average 7	essary) Day Average Maximum
		· · · · · · · · · · · · · · · · · · ·
8.	Facility type:newmodify	replace
	<ul> <li>a) Pretreatment(*)</li> <li>b) Industrial Direct Discharger(*)</li> <li>c) Livestock Management Plan</li> </ul>	
	d) Public Treatment Works(*) Sanitary Sewers	
	Pump Station Land Application of Sludge (Plan e) Semi-Public, Private or Commercial(*) (*) Part 9d. must be completed	Approval Only)
9.	Plan Submitted should include (to be attached to the	e application)
	a) Detail Plans (4 sets; consult with the approach Construction Drawings Specifications Site Plan Vicinity Map	opriate District Office)
	Schematic diagrams  b) Sanitary Sewer Data Sheet (sanitary ser	) te)

MPDES PUCO c the Pu Soil A Ground Livest Certif of Pac	al letter from municipality (pretreatment onl Application (direct discharges) ertification (Facilities Subject to Regulatio blic Utilities Commission)	n by eration
d) Operation and Ma		
cost of the new maintenance cost required. For p and maintenance	he best possible estimate of the annual opera or modified facility. For modified facilitie s for the entire facility, not for just the m ublicly owned wastewater treatment facilities costs of the sewer system. Provide as much d facility/system is operating at design flow/l	s the operation and odified portions are include the operation etail as possible.
		·
statements or asse true and complete,	O4, these signatures shall constitute persona rtions of fact made in the application and at comply fully with applicable state requirementability under applicable state laws forbidding	tachments thereto are nts, and shall subject
	Authorized Signature (of facility) * **	Date
	Title	
	Address	
For Wastewater Treatment Plants:	Signature of Engineer preparing plans.*	Date
	Company	
	Address	
	* Photostatic copies of signatures are not ** Signature of owner or responsible official company required. (See DAC 3745-31-04)	

9. (Continued)

- 11. PTI Application Fees + Plan Approval Fees payable to "Treasurer, State of Ohio" through the appropriate District Office (To accompany each application).
  - a. Application Fee \$ 15.00
  - b. Plan Review Fee (+) \$
- (0.002 x Project costs) + \$100
- (Not to Exceed \$5,000.00)

c. Total\* (a + b)

- (Not to exceed \$5.015.00)
- \* Fee for Sludge Management Plan not to exceed \$115.00
- \* Fee for Waste Management Plan (check with District Office)
- 12. A permit to install issuance fee will be invoiced upon final issuance of the permit in accordance with the following schedule and due within 15 days of effective date.

Design Flow Discharge (gallons per day)	Fee
Less than 1,000	\$ 50
1,001 to 5,000	\$100
5,001 to 50,000	\$200
50,001 to 100,000	\$300
100,001 to 300,000	\$525
Over 300,000	\$750

PTI Issuance Fees payable to "Treasurer, State of Ohio," through the OEPA Central Office at the following address.

Ohio Environmental Protection Agency Division of Finance/Permit Bookkeeping 1800 Watermark Drive P.O. Box 1049 Columbus, Ohio 43266-0149

- 13. The following detailed information must be submitted on a separate piece of paper and attached to this application. Indicate "N/A" for non-applicable information.
  - a) Describe the product or service to be provided by the applicant along with a description of the proposed source/facility (i.e., the number of homes to be serviced, the number of employees, an existing electroplater subject to 40 CFR 413 Sub Part \_\_\_\_ and produces \_\_\_\_\_).
  - b) List the name and quantity of all materials and chemicals (solid, liquid, or gaseous) that will be used or produced by the source/facility (industrial facilities only).
  - c) State the reason for the application. Is this a new installation, modification to an existing source/facility, reconstruction of an existing source/facility, startup of a source/facility that has been permanently shut down for (state number of years), or as built plans for a facility already constructed.
  - d) Has a previous Ohio EPA PTI or plan review application or plan submission been filed for this source/facility? If so, state the date and type of the application previously submitted.
  - e) Will the proposed source/facility comply with all existing rules, laws, and regulations of Ohio EPA and U.S. EPA?

## 13. Detailed Information Continued

- f) State the anticipated quality (concentration and loads) of all types of pollutants to be discharged by the facility.
- g) State in detail the method for disposal for any wastewater or sludge listed in the question above. A complete description of any control system to be employed should be included.
- h) If wastewater is to be discharged to a surface water, state the anticipated concentration (mg/l) and loading (lbs/day) of pollutants in the discharge, and the effect this discharge will have on the surface water under critical conditions. List any NPDES permits or indicate if an application has been filed.
- 1) If wastewater is to be discharged by injection into the groundwater, you must apply for a (UIC) underground injection control permit pursuant to OAC 3745-34. List any UIC permits or indicate if an application has been filed.
- j) If wastewater is to be discharged to a sewerage system, what will be the effect on the sewerage system and wastewater treatment system.
- k) Describe any monitoring equipment to be installed at the facility.
- 1) Will the proposed source conform with area-wide waste management plans for wastewater treatment?
- m) Hydrogeologic site investigation report required for construction or modification of any type of a lagoon other than a concrete lined lagoon or a flow equalization lagoon which shall contain as a minimum:
  - 1) Well logs and material characteristics.
  - 2) Define the uppermost aquifer.
  - 3) Definition of geology/hydrogeology, and major aquifer(s) for water supply in the area of the proposed facility.
  - 4) Definition of depth to bedrock.
  - 5) Definition of saturated zone ("High Seasonal Water Table", perched zones etc.), includes interconnections and relationships between zones and with surface dischargers (streams, springs and seeps, etc.)
  - 6) Data characterizing soil materials to be utilized in construction. (If applicable.
  - 7) Note all sources of drinking water, including wells and springs, within 1.000 feet of the limits of waste placement.

For more details contact the district representative.